

**THE
BIRDS OF IRELAND.**

Order PASSERES.

Family TURDIDAE

Subfamily TURDINNAE

THE MISTLE-THRUSH. *Turdus viscivorus*, Linnæus.

Though now resident, common, and widely distributed, this bird was apparently unknown in Ireland before the nineteenth century.

A Mistle-Thrush, shot early in 1808 in the Co. Antrim was the first Irish example that Thompson had heard of during the first half of the century the spread and increase of this species was noticed throughout Ireland, the Western coast being apparently the last reached. Thus Mr. W. Sinclair remembers it in Tyrone in 1820, but it arrived in Western Donegal ten years later. Up to 1860 it was unknown in Achill, but now breeds there. In Western Connaught it is scarce, but is believed still to be on the increase throughout Ireland in general.

Flocks occur from June to the end of autumn, and may be seen in the same locality for days together. These perform local migrations, but disperse before winter. In November there is an immigration from Great Britain, though on a much smaller scale than that of the Song-Thrush or Blackbird. Some Mistle-Thrushes visit Rathlin Island in frosts, and Valentia is another winter resort.

The Mistle-Thrush is a welcome addition to the song-birds of Ireland, from October onwards it may be heard in our mild climate; at first rarely, but more frequently and fully as each winter month passes, until the full song is delivered in February and March; while even frost and snow will not always silence it. I have heard one uttering its notes in short snatches between each triple stroke of its wings while it flew.

Dr. Benson mentions an instance of its daring. A Sparrow-Hawk was just about to seize a Chaffinch which it was pursuing, when a Mistle-Thrush darted down right on the Hawk's back. For a moment glancing wings were seen, and the Chaffinch dropped into the grass in safety, while the disconcerted Hawk flew off.

The breeding of the Chaffinch close to the nest of the Mistle-Thrush has been repeatedly observed in Ireland; and in one case I saw a Long-tailed Tit's nest in the same tree as that of this Thrush. A pair bred on a bleak headland near the Aranmore Lighthouse, co. Donegal (Migration Reports 1889) and Mr. Brooke found a nest among rocks on a hill near Killybegs, where trees were scarce and there were only a few hazel-bushes. Mr. Pentland found one in a hole of a gate-pier near Clogher Head, no trees being near, but such cases are exceptional. Late nests are uncommon. When deficient in brown colouring the eggs are blue, like those of a Song-Thrush, but paler. Frequently five eggs are laid. The Mistle-Thrush varies to white oftener than do other Thrushes.

THE SONG-THRUSH. *Turdus musicus*, Linnæus.

Resident and common. Breeds in every county. Its numbers increased in winter by immigration.

One of our best-known songsters, the Song-Thrush is numerous distributed, and it breeds throughout Ireland, even on points of Western Donegal not quite devoid of trees, as well as on the islands of Valentia, Lambay, Rathlin and Achill. Some bare coast districts must, however, be excepted, as those of Dunglow in Donegal. Belmullet in Mayo, and Carna in Galway, though these are visited by numbers of Thrushes in winter. Thus the Song-Thrush is a winter-visitor to many districts near the coast, where it finds among the sand-hills a plentiful supply of snails. The shells may often be seen strewn round a stone, used by this bird as an anvil.

I have been referring to the local migration, which results in this species becoming scarce or absent after the breeding-season, and through the winter near Belfast and in Tyrone and Donegal. Its scarcity in July and August has long been noticed in Ireland. On the other hand, there is a general increase in winter in Waterford and Cork, and along the West. During severe frost or snow Song-Thrushes, with allied birds, are seen flying westwards, and visit in the last resort the islands of Kerry, Galway and Mayo.

But more important than the local is the transmarine migration. In October, and still more in November, the British or foreign flocks come over to pass the winter in our milder climate their return journey being observed chiefly in February. These visitors from beyond the channel cross for the most part by Wexford. This route is indicated by the proportion of legs and wings in Mr. Barrington's collection taken at light stations round Ireland. There are none of these from Galway nor Mayo lighthouses except three from the Arran Islands.

The song has been noticed exceptionally in September and October, and is more frequently heard on mild days from November onwards, but it does not attain its full power until spring. I have heard it at 7.30 A.M. and at 4 P.M. in the December twilight, and in May it has been noticed before 3 A.M.

This bird has been seen building on the 14th February at Cappagh, but it usually commences in March. Young birds able to fly have been found on the 10th of April. I have seen a nest in a fir thirty-five or forty feet from the ground. Another nest was built in a deep watering-can. In Achill, owing to want of trees, the Song-Thrush builds in gorse or even in ferns.

White variations have occurred in Ireland.

THE REDWING. *Turdus iliacus*, Linnæus.

A regular winter-visitor, common and distributed throughout Ireland.

The Redwing is common in winter in every county; and in most of them, though not in the extreme West, is considered decidedly more numerous than the Fieldfare. It visits islands like Rathlin and Achill, but it prefers cultivated and planted districts to uplands and exposed places, where, feeding, as it chiefly does on worms and snails, it would soon succumb to frost and snow. At such times one may see Redwings clustering in excitement on any piece of pasture where the snow is thawed.

Though a more regular visitor than the Fieldfare, this bird makes its appearance less commonly in some winters than in others. Its arrival ordinarily precedes that of the Fieldfare, but usually takes place late rather than early in October, while in November the migration is still in full swing. On the 28th of October 1875, during a night of inky blackness, Mr. Harrington heard over Bray the cries uttered by Redwings, which had evidently just arrived, and seemed bewildered by the glare of the town-lights. The barometer was high over North Europe that week, and the winds were E. and S.E. over Great Britain. Redwings arrive in Wicklow in flocks of moderate size, flying rather near the ground; Field-fares, on the contrary, come in thousands together and fly at a great height (Rev. A. Ellison).

In severe frosts fresh flocks may be seen arriving on our eastern shores and swarming in the fields near the coast, or even feeding among the seaweed. With each access of cold the westward movement is renewed, until finally flocks of Redwings sometimes reach the isles of Kerry, and drowned birds have been washed no there.

March is the month of their departure generally through Ireland. I have never noticed them in April in the South; but Mr. Campbell states they leave Londonderry the first or second week in April, and this corroborates Thompson's statement that they remain near Belfast until the beginning or middle of that month. Mr. Moffat, too, reports stragglers in Wexford up to mid-April. One was obtained by Dr. Cox in co. Dublin on 1st May. The chorus of a flock of Redwings "recording" in January, February, or March is a familiar sound. Mr. J. Dickson speaks of the song being heard near Belfast about the beginning of April.

Proof is wanting that this species has bred in Ireland.

THE FIELDFARE. *Turdus pilaris*, Linnæus.

Widespread as a winter-visitor, but more uncertain than the Redwing.

The Fieldfare is much less frequently seen in the South of Ireland than, the Redwing, but the reverse is the case in some more northern counties and at exposed points like Dursey Island.

It arrives later and leaves us later than the Redwing. The statistics of Mr. Barrington's collection show that the greatest number of specimens occur at lighthouses in November, which indicates that month as the time of chief immigration, and this agrees with my own observations, but Fieldfares often arrive in October. On the 16th of that month the Rev. A. Ellison, in the Co. Wicklow, saw a large flock covering part of the sky like a cloud, flying at a great height from the north-east and passing on into the heart of the country. He stated that this, their usual mode of arrival, may be observed for days before they settle in the locality. Thompson saw some in co. Down on the 24th of September, and others have been noticed in Wexford on the 29th of that month, very exceptional cases, which could only occur near the points of arrival. Mr. H. Blake Knox, who resides near the Dublin coast, has stated that during snow Fieldfares were seen coming from the east in countless numbers (Zool., 1868, p.1188). A striking case of continued migration occurred at Rathlin O'Birne Island, off West Donegal, when from the 18th to the 23rd of December 1886, immense flocks of Starlings, Thrushes and Field-fares passed west towards the Atlantic. Sometimes we see no Fieldfares here all the season, until they assemble in large flocks before leaving the country in spring. In April such flocks may be seen about the same place for days together, especially when an inclement spring delays their departure. They often stay

until about the end of that month, less frequently until the first week in May. Mr. Barrington has usually observed Fieldfares to frequent some ivy-covered ashes in North Wicklow until the 6th or 8th of May. Thompson mentions some seen near Lough Neagh on the 31st of May, a singular case.

This species resorts to open and upland districts rather than to those which are rich in timber and cultivation, but, in hard frosts, Fieldfares suddenly appear with others of the Thrush family in sheltered plans. Being berry-feeders they endure frost better than the Redwing. Thompson found them roosting on heath-clad hills. They are fond of wandering and are uncertain visitors. In some winters I scarcely see one, while in others they are common.

Though the full song is unknown in this country, one may hear in February and March a flock of Fieldfares "recording" in the tree-tops.

WHITE'S THRUSH. *Turdus varius*, Pallas.

Three occurrence are on record.

An example was shot near Bandon, co. Cork, early in December 1842 (Thompson). More states in his List, 1890, that this specimen, which had lost its head, was in Trinity College Museum.

Mr. H. Blake Knox has stated that a second was seen by him (but not in the flesh) at a bird-stuffer's in Dublin, and that the Hon. King Harman, of Newcastle, co. Longford, had informed him that it was shot by his gamekeeper in the spring of 1867. (*Zool*, 1870, p. 2060).

A third was shot at the Colonel's Wood, near Westport, co. Mayo, on 9th January 1885, by Captain Rutledge Phair, and presented to the Dublin Museum, where it is preserved. It rose from thick underwood which was being beaten for Woodcock. There is no record of its sex, but the wing measures 6¾ inches, which corresponds to that of the male.

For American Migratory Thrush, see Appendix.

THE BLACKBIRD. *Turdus merula*, Linnæus.

Resident, common, and still more generally distributed than the Song-Thrush. A large immigration takes place in winter from Great Britain.

The hardy constitution of the Blackbird enables it to survive severe winters better than the Thrush, as well as to inhabit more exposed districts in summer, consequently it is not only found breeding commonly in every Irish county, but there are few lowland districts where it does not do so; the treeless district near Dunglow in Donegal and Valentia Island being among these exceptions, though even there it is a winter-visitor. It breeds on Lambay, Rathlin, Achill, the Connemara islands, and the Arran islands, where I have heard it singing on rocks and walls in many places. Owing to the absence of trees in Arran it is said to build in banks and loose stone fences. Its breeding-range is probably extending, for in 1890 Mr. Richards first noticed it breeding near Belmullet, and in 1893 Dr. Delap noticed it in Valentia, while Mr. Sheridan remembers the time when it did not breed in Achill. In districts where moors and mountains prevail, as in Western Connaught, it is naturally scarcer, but throughout Ireland generally it is more numerous than any other bird of the Thrush family. In July innumerable Blackbirds devour our small fruit, and often take it through the nets. In August and September I remark a great scarcity of them in Waterford, and Mr. Blake Knox has noticed this in the co. Dublin. It is time to modify Seebohm's statement that there is no reason to think that the Blackbird is migratory in the British Islands. In October and November immense numbers, in company with their congeners, are observed migrating to our shores, principally to Wexford, often on special nights, in "rushes" which occur at different lighthouses simultaneously. These observations are corroborated by the multitudes of the species that make their appearance through the country at that season, the hedges and plantings becoming alive with them towards the end of October. Their abundance then contrasts with their scarcity during the previous warm weather. Mr. Pentland has noticed such a sudden influx in November near Drogheda; and from almost all parts of Ireland, even Western Donegal, I am told of the winter increase of Blackbirds. They seem, however, to leave Northern Donegal in some winters. In February and March there is an increase in the specimens obtained at lighthouses (Mr. R. M. Barrington), which, however, are far fewer than those in late autumn. The song may be heard on mild days from October through the winter, but not usually before February, and this bird occasionally sings at night. The Rev. C. Irvine has noticed one building in Tyrone on 25th February, but I have no note of a Blackbird doing so before 8th March. Laying commenced in this case about the 15th. Two

successive broods are sometimes reared in the same nest. Sir Douglas Brooke found a nest on the level ground in Fermanagh, and the *Irish Naturalist* (1897) contains an illustration of a Blackbird hatching on a greenhouse shelf. In 1890 more than one bird near Cappoquin produced eggs with a white, not a green, ground, and I have a similar set taken about a mile from Cappoquin in 1885.

White and pied examples of this bird are particularly frequent. In the *Field* of 20th February 1875, Glennon mentions twenty-nine pied Blackbirds preserved by him since 1st January 1874. I have seen a pure white specimen while another in my plantations was of a tawny-buff, a variation that has occurred elsewhere.

THE RING-OUZEL. *Turdus torquatus*, Linnæus.

Summer-visitor, frequenting in limited numbers the higher and wilder mountain districts in every quarter of Ireland. Stragglers have occurred in winter.

I can find but four counties, viz., Meath, Westmeath, Longford and Armagh (which are not mountainous), from the avifauna of which the Ring-Ouzel can be excluded. In all, or nearly all, the other counties this species has breeding-haunts. I may specially mention the higher mountains of Kerry, Waterford, Tipperary, Wicklow, Galway, Mayo, Sligo, Leitrim, Donegal and Down, but in many other counties it is not uncommon in suitable haunt. In Waterford it is only found above the thousand-foot line, but in Donegal, where it is probably more common than in any other county, I have twice met with it near Doocharry Bridge, among rocks and heather, very little above the sea-level. I have also heard the piping cry or song far down the seaward face of Croghaun Mountain in Achill, and have met with a young bird unable to fly, attended by its mother, near the edge of the cliffs of Horn Head in Donegal. Ring-Ouzels formerly frequented Howth Head and Lambay Island in Co. Dublin.

April is the usual month of arrival. Individuals have been seen on the Skelligs on the 5th of that month, and on Blackrock, Mayo, on the 26th March. In September and October these birds assemble in small flocks and leave Ireland. Thompson mentions their collecting to feed on mountain-ash berries before they depart, and Mr. Pike, who lived at Achill Sound, spoke of them as most destructive to fruit.

Thompson and Kinahan have mentioned irregular occurrences in winter, and other instances of this have been known since, but such are decidedly rare.

THE WHEATEAR. *Saxicola œnanthe*, (Linnæus.)

Summer-visitor, widely distributed, breeding in nearly every county.

The Wheatear finds congenial breeding-haunts in many portions of Ireland; at the same time it does not frequent districts furnished with trees and bushes, nor the bogs of the central plain. It is the most conspicuous land-bird in the tree-less portions of our western counties bordering the ocean, as well as on the marine islands generally, breeding commonly on most of them, for example on the rocky and precipitous Blaskets. It is to be found nesting both near lofty cliffs and among sand-bills near the beach on many of our coasts. After losing sight of it in the cultivated country we find it again far up the mountains, where large masses of stone have fallen from the cliffs often left by ancient glaciers.

Wheatears are not uncommonly seen in March, and sometimes early in that month, especially on the coasts; but it would appear that the majority arrive in April, for more than half the specimens received by Mr. Barrington from light-stations were taken in that month and again more than half on the Wexford coast. On Dublin Bay, Montgomery observed the arrival of Wheatears in March in five years when the wind was south-east, but in three other years, when the wind was westerly at the time, they were not seen before April. They usually migrate in September, but often remain into October. In autumn they gather together and draw down to the neighbourhood of the sea, where they remain for days before leaving. In several instances this species has been recorded in Ireland in the depth of winter.

Mr. Pentland, when going to Canada in August 1883, observed two

Wheatears come on board the day after he had sailed from Ireland, and they stayed on or about the ship until he reached America.

These birds have been noticed in Ireland, as elsewhere, singing on the wing, and taking flies after the manner of Fly catchers. They nest in rabbit-holes and in holes among stones, or under sods turned up by the plough.

THE WHINCHAT. *Pratincola rubetra*, (Linnæus.)

Summer-visitor. Local and not numerous.

The relative abundance of the Whinchat in England, compared with that of the Stonechat, is reversed in Ireland. Though I have observed birds here nearly all my life, I have but once seen the Whinchat in the South of Ireland, and I know of no instance of its breeding in Munster. True, Thompson stated, "Mr. Neligan considered this bird common in Kerry," but though I have several notes of the occurrence of Whinchats in Cork, Waterford and Wexford, I cannot say that these were more than stragglers. The most interesting fact connecting this bird with Wexford is that out of twelve examples obtained from light-stations by Mr. Barrington, seven were from the Wexford coast, to which the migration-route of so many species principally leads.

The Whinchat breeds very locally in the counties of Wicklow and Dublin, both inland near the mountains and also near the coasts. Mr. Hart observed a pair near Durrow in Queen's County, and others by the Nore near Kilkenny. It is found on the mountains in the north of Louth, while in Longford, Roscommon, Leitrim and Sligo it nests, probably more commonly than elsewhere in Ireland, and it extends westward into North-east Mayo. Throughout Ulster it occurs locally, breeding in almost every county, as it does in North and West Donegal.

April is the usual month of this bird's arrival in Ireland, but examples have been met with as early as the 17th of March. It often remains until October, and Kinahan has shot it in December, January and February.

The Whinchat haunts low-lying marshy meadows, and old cut-away bog which is in an untidy state of cultivation, and full of weeds, also the half-reclaimed lands round the base of mountains, as well as sedge-lands near the coast. It will perch on low trees and telegraph wires, but it does not take to the furze on the hills, as the Stonechat does.

THE STONECHAT. *Pratincola rubicola*, (Linnæus.)

Resident and widespread, breeding in every county.

The Stonechat is a common bird in Ireland, owing probably to the great extent of the country which abounds in furze; but though plentiful in many counties it is scarce in others, especially in those parts of our midlands where the Whinchat is found.

Both, however, occur in some districts. The Stonechat breeds on the larger islands round Ireland and delights in the maritime districts, where it is equally common in winter and summer. This may be said of Munster generally, the province in which it is most abundant; but in Leinster and Connaught, and more especially in Ulster, several observers have noticed a diminution, almost an absence, of Stonechats in winter. Thus the Rev. C. Irvine, writing from the Co. Tyrone, says: "They seem to leave this cold, exposed parish in severe winters for warmer localities. I met with numbers in winter near Bundoran, Donegal Bay."

English writers have noticed a statement of Mr. Blake Knox made in 1866, that there is a scarcity of Stonechats in this country from June to October; but this must have been a local matter, for other Irish observers have not found it so. The short attempt at a song commences the first week in April and ceases before the end of June. I have seen a Stonechat rising and falling like a ball on a fountain, while singing on the wing, which it often does. It lays in April, and broods are often hatched in that month. A second clutch is laid in June, and I have obtained eggs in July.

THE REDSTART. *Ruticilla phœnicurus*, (Linnæus.)

Rare summer-visitor, but probably increasing. Breeds in at least two localities in Co. Wicklow, and in one or more places in Co. Tyrone.

Previously to 1885 the Redstart was regarded as a rare occasional visitor to Ireland. Montgomery in 1852 could only mention six occurrences, including those recorded by Thompson (Proc. D. N. H. Soc., May 1852, p. 89). Kinahan enumerates Belfast, Queen's Co., and Dublin, twice, as localities in which it has occurred in winter (Ibid., 31st January 1861, p. 18).

Mr. Barrington has sixteen specimens obtained at light-stations, chiefly in April and May, but some in September, one in October and one in November. Of these seven were taken at Rockabill, off the Dublin coast, all in spring. Two are from Wexford, one from Waterford (Dungarvan), two from Cork (Fastnet), one

from Mayo (Blackrock), and three from Donegal (Killybegs and Inishtrahull). Those from the three latter counties occurred in autumn. An immature male in the Dublin Museum was found dead at Tramore, co. Waterford, by Mr. Spencer, after a storm in October 1889, and Mr. Moffat records two seen in co. Wexford on 8th August 1885. Miss More observed one near Dublin on the 17th of May 1891.

In 1885 the pleasing discovery was made of two pairs breeding at Powerscourt, co. Wicklow, and the species has nested there ever since. In 1890 a pair bred at Luggela Mountain, and in 1898 Redstarts were observed at Glendalough, both localities in co.

Wicklow.

In May 1888 the Rev. G. W. Peacocke saw a Redstart repeatedly and heard him sing, in Rash Wood, co. Tyrone. In 1894 a keeper named McLean at Baronscourt, co. Tyrone, showed me a pair, which had young, nesting in a broken hollow branch of a birch, and informed me that he had seen them breeding for several years in the old trees in the demesne. In 1895 another nest was found at Baronscourt containing seven eggs.

In June 189R Mr. Carey, an Englishman acquainted with this bird, told me that he had repeatedly seen a male Redstart about a spot near Lough Conn in Mayo, and I was informed that other persons subsequently saw it there.

THE BLACK REDSTART. *Ruticilla titys*, (Scopoli.)

Irregular winter-visitor in small numbers, chiefly occurring on the coasts.

Many individuals and family parties of this European summer-migrant find their way to our south and south-east coasts in October and November, and a few of these appear to remain until March.* It is startling to find the Black Redstart reversing the habit of so many allied birds which visit us in summer, but it "should be remembered that the Wheatear, Whinchat, Red start and several Warblers have repeatedly occurred, and remained, in some cases, in Ireland in winter

*Two have reached Mr. Barrington from Wexford light-ships in March 1899, namely, one from the Blackwater Bank taken on the 16th, and the other from Coningbeg on the 18th.

I have records of above sixty occurrences of the Black Redstart (some including several birds) from Dublin round the south-east coasts to the Blaskets, west of Kerry, besides several others indicated without particulars, A few of these were in inland portions of maritime counties.

If we now search for instances from Dublin northwards round Ulster and the west coasts to Kerry, we find but six and only three in midland counties, namely, a bird, which was shot near Thurles, another that entered Leap Castle, King's Co. and another in Queen's Co. (Montgomery collection). Mr. Barrington has sixteen specimens, included among the above, from isolated sight-stations, and others not taken have been reported there. Black Redstarts have been taken on the same day on the Skelligs and Blaskets, indicating a migration round Western Kerry.

These birds pursue in Ireland their habit of darting into the air after flies, with which the stomachs of specimens have been found filled, even when the ground was covered with snow. They are often unsuspecting and enter houses, like two which I found in my study in October and November 1895. Mr. Williams mentions one that lived up in the glass roof of a Dublin store for two months.

Females and birds of the year occur in Ireland much more frequently than adult males. On many occasions several Black Redstarts have been met with together.

THE REDBREAST. *Erithacus rubecula*, (Linnæus.)

Resident, common, and widespread.

Though this species does not extend to some bleak districts and islands where the Hedge Sparrow and the Wren find a house, it is very generally distributed through Ireland. It is most numerous in sheltered and cultivated parts, but maybe met with on moors and mountains in smaller numbers.

Thus I have met with the Redbreast in the Comeragh Mountains, eighteen hundred feet above the sea, and on the bleak moorlands between Ballynahinch and Kilkieran in Connemara, where we saw specimens of a greyish tint on the back. It inhabits the islands of Rathlin, Aranmore, the Arran Islands and Achill, but is scarce in the latter and in most of the Barony of Erris.

Specimens have been taken at isolated light-stations off the coast of Leinster, and have been often noticed from such stations all round Ireland at various seasons, except in May and June.

The song may be heard at any time of year, except in July and the first week in August, though instances have been noted at these times too. Kinahan used to notice it on frosty, moonlight nights in winter, beginning at 12 and ceasing at 2 A.M., for this bird is so persistent a songster that it may be heard at the most unlikely times, and it sings sometimes in its first plumage.

A Redbreast has been seen darting repeatedly into the air after gnats like a Flycatcher, and another has been met with leaving a drain with a stickleback it had just caught there.

It is an early breeder. I have seen one building in March, and have known of young ones hatched here on the 7th April; but Mr. T. B. Gibson records young Redbreasts fully fledged on 7th February, near Ferns. A nest was built in a watering-can hung up in a porch that opened into a garden at Lismore.

A white variety was noticed at Knockdrin with only a slight tinge of brown on the breast-feathers, and a farm near Cappagh was frequented on successive seasons by a male whose back was ash-coloured and under-parts white, while only the face was reddish its mate was of the ordinary colours, and young were produced.

Subfamily SYLVIINÆ.

THE WHITETHROAT. *Sylvia cinerea*, Bechstein.

Common summer-visitant, generally distributed.

Few birds are more widespread in Ireland than the White-throat. It may be said to be common in every part of the country where there is anything more than bare mountain or moor. I have noticed that it did not frequent the wild tracts of Erris in Western Mayo, but as soon as any pasture or arable land was reached I found it. It breeds commonly in every county, and we meet with this species not only in the wooded and cultivated parts, but in many treeless districts, such as Connemara and Western Donegal. Throughout the country round Dunglow, from which so many species are absent, I have found it abundant. It visits Lambay and Rathlin Island regularly, and Mr. Sheridan says: "This bird did not visit Achill in my young days, but is now very plenty;" I have not however, found it on the stony isles of Arran.

Many Whitethroats arrive in April, except in the extreme North and West, and I have notices as early as the 5th of that month, but the greater number arrive about the 12th of May (Barrington). The stay of this species is longer than that of the Sedge-Warbler, September being the month when Whitethroats principally depart. Some remain until the end of September. Instances have occurred in October, November, December, January and February, but these are very exceptional.

Out of sixty-eight occurrences at lighthouses, illustrated by Mr. Barrington's specimens, thirty-nine, or more than half, are from the Wexford coast, and only one from the coast of Connaught, but some arrive on the eastern shores of Ulster.

In the Field (6th November 1875), it was stated that an observer crossing from Bristol to Cork the first week in April, noticed, a little after dawn, some small birds, including the White-throat, which were migrating. These came from the direction of Cornwall, and they were heading for the south-east of Ireland.

This Warbler often displays itself fearlessly, especially when singing. I have repeatedly noticed it sitting on a telegraph wire.

The Rev. Allan Ellison, a very observant field-nature list, has invariably found the male to be the nest-builder. He will continue thus employed for hours, without assistance from his mate, singing constantly, often with materials in his mouth.

THE LESSER WHITETHROAT. *Sylvia curruca*, (Linnaeus.)

Had once occurred, on the autumn migration.

A specimen, which Mr. Seebohm considered to be adult, was shot on the 1st of October 1890 on the Tearaght, co. Kerry the most western island in Europe. It is in the collection of Mr. Barrington.

This is one of those instances of a straggler to Ireland on the autumn migration. Many such instances have occurred in the case of the Blackcap, and the Reed-Warbler is said to have been once shot in December by Montgomery.

A. G. More suggested that, like the Yellow browed Warbler, also shot on the Tearaght in October 1890, this Lesser Whitethroat had come from a more eastern source than Great Britain; but Seebohm decided from the wing-formula that it was of the western race (Ibis, 1891, p.586).

THE BLACKCAP.

Sylvia atricapilla, (Linnæus.)

Summer-visitant, local, rare in most counties, but increasing.

The Blackcap has now a wide range in Ireland, there being few counties in which it has not been observed, though in most of them it is still scarce, and even rare. Its frequency in the county of Wicklow which is its great stronghold, has been noticed by many since 1886. In the counties of Dublin and Waterford, and probably in many others, it has also increased. It is much more generally distributed than the Garden-Warbler. I have met with it at Rockingham, Co. Roscommon, where the latter species was seen on the same day, and it also breeds near Lough Erne, another resort of the Garden-Warbler.

The Blackcap arrives in April, the earliest notice I have being for 5th April, and several for the 12th, but later dates are more usual. A nest with four eggs, found by Mr. Johnston on 9th May, was considered early. Blackcaps have been several years observed in East Wexford in July and August, not previously (Moffat).

A most singular fact about the Blackcap in Ireland is the frequency of its winter occurrences. These have not been confined to any part of Ireland, but have been reported from all quarters of the country. Of thirty-six instances under my notice which have occurred since 1830, eight were in October, four in November, ten in December, five each in January and February, and four in March, the last having evidently remained through the winter. On one occasion six or seven were seen together in December (Thompson). The mildness of the Irish climate may be connected with these cases. Adult males have occurred in winter as well as females and young birds. The Rev. A. Ellison has observed the male bird building the nest, singing from time to time while so employed. The song is not so loud and full as in England, our Irish Blackcaps being decidedly more shy.

In the following table:-

* Signifies that the nest has been found.

S Signifies observed in the summer half-year, April-September

W Signifies winter occurrences, October-March.

l Signifies occurrences at light-stations, chiefly September-December.

Kerry, *S* Caragh Lake, *l*

Cork, *W*. repeatedly, *l*

Waterford,* *S*. increasing, *W*-. repeatedly.

Tipperary,**S*. several places, *W*.twice.

Kilkenny, *S*. occurs regularly, locally.

Queen's Co., *S*. Cappard, Portarlinton, W. Rynn,

Westmeath, *S*. Lough Twy.

Meath, *S*. Oldcastle, Slane, Beauparc.

Louth, *W*. Beaulieu.

Galway,* *S*. Clonbrock, Portumna, *W*. Dunmore.,

Roscommon, *S*. Rockingham, near Athlone.

Mayo,* Belleek, *S*, Ca.stlebar River, *W*. twice Achill. *l*.

Carlow, *S*. occurs regularly, locally.

Wexford, *S*. in August, *W*. *l* Tuskar.

Wicklow,* *S*. locally common, *W*.

Dublin,* *S*. locally common *W*. repeatedly, *l*

Kildare, *S*. Breeds at Lyons.

Sligo,* Hollybrook, *S*. Lissadell.

Fermanagh,* Islands Lough Erne, *S*. Castle Coole.

Cavan,* Mountnugent River.

Armagh, *S*. (Belfast Nat. Field Club).

Down, *S*. several places, *W*. Palace Gardens.

Antrim, *S*. several places.

Tyrone, *S*. Mountjoy.

Donegal, *S*. Rathmullen, Glenalla, *l*

THE GARDEN -WARBLER. *Sylvia hortensis*, Bechstein.

Summer-visitor, locally, to parts of the four Provinces. Unknown in most districts.

The extended range of this bird now ascertained in Ireland, as compared with its alleged rarity in Thompson's time, may be the result of fuller investigation rather than of actual increase, but we certainly can now name many counties in which it has been found. In 1893 Mr. Parker of Castle Lough, on the Tipperary side of Lough Derg, showed me the bird on its nest, and no fewer than eight or nine males may be heard

singing in different parts of his place. It also visits the Clare side of Lough Derg. I have met with the Garden - Warbler on successive years on an island in Lough Ree, also at Castle Forbes in Longford, where I found a nest, at Rockingham, co. Roscommon, where it was also breeding, on islands in Lough Key, at Hollybrook on Lough Arrow, co. Sligo (in successive years), and at both ends of Lower Lough Erne, co. Fermanagh. In the latter district it was known to Sir Victor Brooke in 1869, when he noted that there must have been ten or twelve pairs at Castle Caldwell; while in 1884 Mr. Barrington shot one and heard others on Upper Lough Erne, near co. Cavan. I can thus vouch for its being a regular visitant to a chain of lakes extending from Munster up the Shannon Valley and into Ulster, and have also observed it for a few days in May, in 1893, in my garden at Cappagh, as well as at Dromana, in the co. Waterford. In Thompson's time it was reported from Cork, in which county Mr. Crosbie Smith has three times noticed it since, near Queenstown and Padssage West. It has once been met with by Mr. Moffat in co. Wexford, and by several observers in co. Wicklow, though not known to breed there. The late Lord Lilford informed me, from memory, that he had met with it in Queen's County in 1853. I have seen eggs, which I referred to this species, taken at Glaslough, co. Monaghan. It has been repeatedly observed in the counties of Down and Antrim, especially along the River Lagan which divides them, and its nest has been found in

Down.

Two specimens have been obtained at light-stations; one taken on the Conningbeg lightship, off co. Wexford, on the 4th October 1886, and the second on the Blackwater Bank, off the same coast, in May 1899 (Barrington).

Notwithstanding its wide range over the above localities, the Garden-Warbler is a species by no means generally diffused, even in the counties where its most favourite haunts occur. Its resorts on Lough Erne and the lakes of Sligo, Roscommon and the Shannon Valley are demesnes and islands where the natural wood has survived more or less, and where there are vast tangles of brambles, blackthorn and other scrub, intermixed with oak and other trees, having sunny open spaces between them. In most of our counties it is rare or unknown, but it may yet be discovered in several, as few persons attempt to distinguish the notes of a Warbler which is seldom seen.

At Castle Lough it usually makes its appearance the first week in May, and continues in full song until June. Its song then begins to decline, though Mr. Parker has heard it as late as the 20th of August. The warning note is like the sound of a clock being wound very slowly, quite unlike that of the Whitethroat or Sedge-Warbler.

It is remarkable how a Garden-Warbler may be heard year after year in the same spot, each male seeming to have his favourite haunt where he sings through the season. In Ireland we have no sweeter songster.

THE BARRED WARBLER. *Sylvia nisoria*, (Bechstein.)

Has twice occurred on the coast in September.

The first example of this bird in Ireland was obtained at Belmullet, in the west of Mayo, on the 24th September 1884, by the late Dr. Burkitt, who during his long life collected so many rare birds in Waterford. The specimen in question was pronounced to be a young bird in first plumage (Seebohm in *Ibis*, 1891, p. 583). Dr. Burkitt was so generous as to give it to me, and it is now in the Dublin Museum. In August and September of the same year, 1884, one was obtained in Norfolk, one in Yorkshire, and one in the Isle of Skye, all four specimens having occurred on or near the coast. Twelve years afterwards, on the 25th of the same month, September 1896, a second Barred Warbler was caught wounded at the Rockabill lighthouse, off the co. Dublin coast, and sent in the flesh to Mr. Barrington, in whose collection it is now preserved.

THE GOLDEN-CRESTED WREN. *Regulus cristatus*, K. L. Koch.

Resident and common. Breeds in every county. In autumn numbers of winter immigrants arrive.

This tiny bird is found breeding wherever there are trees, and in sheltered wooded districts the numbers of its nests are surprising. As a resident it appears to be more common in Ireland than in England, and holds its own in remote districts. Thus it now breeds regularly in plantations on Achill Sound, though it was only a winter-visitor there in 1875, and previously unknown. However, its spread to such places is not surprising when it is considered how habitual a migrant the Gold-crest is. Its migrations are annually observed round all our coasts,

even on the Arran Islands, at Slyne Head, where so few migrants occur, and on the isles of Donegal, e.g. Inishtrahull. Though a large proportion occur at the seven Wexford light-stations, yet this species when on its travels is far more generally diffused round Ireland than are the summer-migrants. September and October witness the largest arrivals, and the return migration commences in March and increases in April. In some autumns there are great rushes, as in October 1884, when they were seen at Rockabill all day and night and fell in scores (Migration Report). But Gold-Crests are on the move at unexpected seasons. Some have been noticed at lighthouses in the summer months, chiefly in August.

The Gold-crest is only an occasional winter-songster. Its legitimate time for song is early spring, commencing in January and ending in the beginning of June. On frosty days, however, it may be heard as early as the 18th November (Kinahan).

I have known of several nests in March, and in one four eggs had been laid by the 14th. The numbers breeding increase up to May, but as eggs may be found until the end of June, there can be no doubt that a second brood is often reared. In sheltered localities the nest is usually among pendant sprigs of conifers or ivy, but Mr. Pentland has noticed in Louth that in exposed places, where the wind would be likely to blow the branches about, Gold-crests prefer to nest against an ivy-covered tree, or in a furze bush, and in such places their nests are not nearly so neat. I have repeatedly found nests in the drawn-up furze of plantations, or built in ivy against a tree-trunk. Mr. Pentland found a nest with eggs, under and almost touching that of a Hooded Crow, in the top of a lofty silver-fir. One nest, abnormal in not being pendant, stood in the branchy top of a young silver-fir that had lost its "leader"; this nest was four-and-a-half inches high, with a shallower cavity at the top than usual. The number of eggs is usually nine, sometimes fewer, occasionally ten, and the Rev. A. Ellison has found eleven. In some varieties, grey under-shell specks supplement those of the usual colour round the larger end of the egg.

THE YELLOW-BROWED WARBLER.
superciliosus, J. F. Gmelin.

Phylloscopus

Has once been obtained, in October.

The only Irish-killed specimen of this Siberian species was shot on the 14th of October 1890, on the Tearaght rock off Kerry, our most western point. It was sent in the flesh to Mr. Barrington (who has preserved it), by Mr. W. H. James, lightkeeper. The latter wrote as follows: "I forward a very small bird shot by my son at 10.45 A.M.; wind light N.N.W. blue sky, detached cloud. It was first observed on a mallow-bush (*Lavatera arborea*), as if seeking for insects. It then flew to some rocks, where it was shot. It only weighed 1 drachm 11 scruples."

THE CHIFFCHAFF. *Phylloscopus rufus*, Bechstein.

Summer-visitant, breeding commonly in wooded districts in every county.

This is a bird of the woodlands and not of the wilderness; consequently it is not nearly so widespread as the Willow-Wren, though where trees abound it is often more numerous than the latter. Indeed the Chiffchaff swarms in many a wood and demesne throughout the country. Still, from the restricted nature of its haunts, it cannot be so numerous in Ireland as the Willow-Wren, which finds a home in desolate wilds. It is, however, an increasing species. Fifty years ago Thompson could only cite seven counties where it was known, and in 1864, Newman failed to hear it in more than two places.

The first recorded arrival of the Chiffchaff in Ireland is usually from east of the Shannon, during the last week in March, but earlier reports of it are frequent, and Mr. Barrington noticed it at Fassaroe on 8th March 1872. A couple of days after the first is heard the woods will be full of Chiffchaffs. The spring migration continues strong in April. Out of eighteen received by him from lighthouses, Mr. Barrington has ten specimens taken in April, and eleven were from Wexford. Near Ballina Mr. Warren has only once heard it before April, and in some seasons not at all.

The renewal of the Chiffchaff's song in September is a fact commonly observed, though I have then remarked it to sound like "Cheef, cheef," without the "chaff." This bird remains later than the Willow-Wren, commonly until late in September, and has often been noticed in October.

I have records of ten instances of the Chiffchaff's occurrence from November to February. Five of these were in the mild climate of co. Cork, but Mr. Warren mentions one in co. Sligo which frequented a manure-heap, amid hail and snow, on 24th January, and Mr. Williams mentions a similar instance in December. The note is uttered even in cold, wet, stormy weather, and has been heard in winter.

The nest of this bird has repeatedly been found three and four, even five, feet from the ground. I saw one at Currygrane about three feet above the ground in the top of a holly which had been clipped into an umbrella shape. I do not remember any case where it was quite on the ground. Mr. Pentland, however, mentions a nest in a mossy bank of which nothing could be seen but a little round hole in the moss. He returned in a week, but the hole was not to be seen. After a long search he found the nest. The bird was in it, and the hole was stopped by a plug of moss. I have seen a Chiffchaff's egg taken from this nest. In Seebohm's statement, that "the nest of the Chiffchaff does not differ from that of the Willow-Wren," I cannot concur, as I have usually found dead leaves and other coarse materials used in the former, and hay in the latter.

I have seen a Chiffchaff's nest, largely composed externally of green moss, built in a branch of long straggling furze.

THE WILLOW-WREN, *Phylloscopus trochilus*, (Linnæus,)

One of our commonest summer-visitants, breeding in every county.

This is a very numerous and widespread species in Ireland, inhabiting not only the fertile and wooded districts, but extending through the country generally. It is common round many a lake, and in many a desolate district. Along the lonely reaches of the Shannon which flow through vast un-inhabited bogs, the few willows by the river resound with its song. I have found it common between Glenties and Naran, but not in other parts of Western Donegal, such as the bare country round Dunglow. In Connaught it is plentiful, as far west as the basins of Loughs Corrib, Mask and Coun, as well as near Ballina; but further west, it is very scarce. It seems to avoid bare moorlands, as also the storm-swept western sea-board of that Province, but when one reaches a grass country it usually reappears.

Of sixty-two specimens sent to Mr. Barrington from light-stations, thirty-five, or more than half, were from Wexford. None came from the counties between Kerry and Donegal, round the west coast. Forty-eight occurred in April and May, none in June, and only fourteen in the next three months.

The Willow-Wren is our earliest Warbler except the Chiffchaff. It arrives about the 10th of April, but I have many earlier notices of it, especially from the eastern counties, and a few entries of its appearance in the end of March. In Western Sligo Mr. Warren has seldom observed it before the 15th of April. Early in September parties of Willow-Wrens, then very yellow, appear before departing, and they leave us before the end of the month. A bird was seen on the 15th of November in co. Wicklow, and Montgomery recorded one in winter in co. Louth.

The song is discontinued after July, and not usually resumed in September, like that of the Chiffchaff, though Thompson heard it on 24th September and on 10th October.

The Willow-Wren has been stated to eat fruit (Ogilby, in *Field*, 4th December 1875), but this is evidently mentioned because it was exceptional.

I have seen a nest of this bird constructed in a clump of *Pernetia*, quite off the ground like a Chiffchaff's, but not so loosely.

THE WOOD-WREN. *Phylloscopus sibilatrix*, (Bechstein.)

Rare and local summer-visitor.

Though the repeated observation of the Wood-Wren in the co. Wicklow leaves no doubt that it is an annual visitant there, yet it is the rarest of our Warblers of which this can be said. Powerscourt, the Dargle, the Glen of the Downs, the Devil's Glen, Derrybawn Wood, and Glendalough, are localities in that county where it has been met with repeatedly, especially the first-named.

Mr. H. B. Murray believes that he has heard and seen it near Clonmel in 1867 and 1869, and Mr. Moffat describes the song heard by him at Ballyhyland, co. Wexford, on the 1st July 1892, the Redstart and Blackcap

(birds which also resort to co. Wicklow) having been similarly met with at Ballyhyland on passage in July and August.

In co; Dublin Mr. H. Blake Knox recorded one killed at Glen Druid (Field, 6th May 1871), and Mr. Rathborne states that he saw one at Abbotstown in the month of July.

In Queen's Co. Mr. John Young showed me a spot at Brockley Park, in the pleasure-ground near the house, where he found a nest in 1872 or 1873. It was on the ground, overshadowed by lofty beech-trees, and was placed among beech-seedlings and tufts of coarse grass. It contained no feathers, and the seven eggs (three of which he has given to the Dublin Museum) were preserved and shown to me. At Clonbrock, co. Galway, the Hon. R. E. Dillon has repeatedly met with the Wood-Wren in the fine old oak woods. He has the skin of a Wood-Wren as well as an egg, which, in different years, he obtained at Clonbrock; while a bird was caught there in the house on another occasion, in June 1894; and carefully identified before it was liberated.

In Sligo the late Colonel ffolliott said that he had seen several at Hollybrook, though not every year. He carefully examined one which he caught in his greenhouse.

The only occurrence at a lighthouse was at Blackrock, Mayo, in the extreme west, where a Wood-Wren was taken on the 27th May 1890, and sent to Mr. Barrington.

In Fermanagh the late Sir Victor Brooke observed a pair frequenting some beech at Colebrooke in May 1870. He shot one, which is in the Dublin Museum. None have been since seen there. Mr. H. C. Hart shot one in beech woods at Glenalla, co. Donegal, on 1st June 1878, and sent it to the same Museum. On 8th May 1896 he again observed three Wood-Wrens singing at Carrablagh, in the same part of Donegal.

A bird of this species was observed by Mr. R. Patterson in the Bog Meadows near Belfast, co. Antrim, on the 5th May 1889.

:Mr. Hart has once heard the song in Wicklow on the 7th May, which he considered unusually early.

THE RUFOUS WARBLER. *Aëdon galactodes*, (Temminck.)

Has once occurred, at a co. Cork lighthouse, in September.

A specimen of this rare southern species was shot by Mr. F. R. Rohu; then a light-keeper, at the Old Head of Kinsale, in September 1870, the wind being from the southeast. He subsequently presented it to the Museum of Queen's College, Cork, where it is now preserved.

It was believed to be a Nightingale, and as such was referred to in several publications, but at my suggestion Professor Hartog, of Queen's College, took it to London for comparison in January 1899. On his showing it to Mr. Howard Saunders, the latter recognized it as the true Western Rufous Warbler, not the Eastern *Aëdon familiaris*.

This bird has now been obtained in the British Islands on four occasions, the first near Brighton on 16th September 1854, the second at the Start, Devonshire, on 25th September 1859. Our Kinsale bird was the third, and on the 14th October in the same year, 1876, a fourth was obtained near Slapton, Devon, not far from where the specimen of 1859 occurred. This last was very possibly impelled to British coasts by the same causes to which we owe the Irish example, taken the previous month.

The Rufous Warbler is common from April to September in Portugal and Southern Spain, but is seldom found further north in Western Europe.

THE ICTERINE WARBLER. *Hypolais icterina*, (Vieillot.)

Has once been obtained, in co. Dublin.

This specimen, now in our Science and Art Museum, was obtained by the late Mr. J. G. Rathborne at Dunsinea near Dublin, on the 8th June 1856. He was attracted by its splendid song, which was new to him. He watched the bird as it rose up from some willows in his grounds, after the manner of Flycatchers, and returned singing to the branch again.

On the 29th May 1886 the Rev. A. Ellison saw, as he believed, this species in the woods of Coollatin, co. Wicklow. He described it as very like the Willow Wren, but somewhat larger, having a longer tail, and the under-parts of a much more decided yellow, very restless, darting at insects on the wing and singing all the while. When it gave forth its full song it would remain still, swelling its throat as it poured forth the notes. It. Sometimes introduced harsh sounds and often began with a sort of chattering

noise. Its full notes were as loud as those of a Thrush, and for clearness, volume and distinctness of execution surpassed any song known to the observer. A similar bird is said to have been seen and heard about the same time in Pembrokeshire. (*Zool.*, 1886, p. 333). Mr. Aplin suggests that both these birds may have been Melodious Warblers (*H. polyglotta*).

THE SEDGE-WARBLER. *Acrocephalus phragmitis*, (Bechstein.)

Common summer-visitor, breeding in every county, but unevenly distributed.

This is one of our commonest Warblers, and in most counties in Ireland its note may be heard by the sides of lakes and rivers, and is continued into the night.

It has been met with in Rathlin Island, the Mullet and Achill, but though abundant in so many localities it is seldom or never found in many where we should expect it. Thus I have been surprised at its scarcity in the Shannon Valley, and on many of our Midland lakes. It is not frequent in the great wilderness of the west, as it is in the richer counties of the east and south. This is one of the species most numerous represented from light-stations in Mr. Barrington's collection. His one hundred and eleven specimens occurred on seventy-seven occasions.

Cork.....3	Wicklow..2	Antrim..4
Waterford..7	Dublin.....7	Donegal.2
Wexford..48	Down..... 3	Galway..1

It is true that Wexford has seven light stations, but still the number of Sedge-Warblers it shows greatly exceeds that from all the other counties, and only one specimen was received from the entire west coast. Many have occurred simultaneously at the same lighthouse. Thus on the 11th August 1890 fourteen were taken at the Tuskar. Sometimes several occurred on the same night along

For Reed-Warbler, see Appendix.

a particular coast, showing that the species was migrating. The Sedge-Warbler frequently appears towards the end of April, and has been noted by Dr. Fatten and Mr. Johnston on the 5th April, but the bulk of the arrivals are in May, as the lighthouse reports show, and there is a return migration in August and September, the latest occurrence being on the 9th November.

Kinahan recognized the song as imitating that of the Black-bird, Whitethroat, Wagtail, Titlark and Bunting, and others have noticed that it mimics the Reed-Bunting, which is so common on Irish lakes. Though May and June are the usual months of its song, it has been heard repeatedly in July, and once as late as the 5th September.

It breeds with us in the end of May, throughout June, and in the early part of July.

THE GRASSHOPPER-WARBLER. *Locustella naevia*,
(Boddaert.)

Summer-visitor. Common in many places. Almost too widespread to be called local, but liable to be overlooked.

I have evidence of this species in twenty-five counties, and these are so scattered throughout the provinces as to warrant the expectation that the gaps will be filled up when information is more complete. In some counties, as Antrim, Dublin, Wexford and Waterford, it occurs in so many localities and varieties of situations as to denote it a common bird. Several pairs are frequently found about the same haunt., and were it not for its crepuscular and skulking habits the bird would be far better known.

I have no record of it from the marine islands nor from the western sea-board, though in co. Waterford it sometimes breeds not far from the coast.

I have two entries of its occurrence here at Cappagh, on the 11th April, but it is usually first heard the last week in that month.

From Mr. Moffat's observations in co. Wexford, it appears to sing into the first week of August, when it abruptly ceases altogether.

Of seven specimens in Mr. Barrington's collection, five are from Wexford light-stations, one from Wicklow, and one from Down. Three occurred in April, three in May and one in August.

This species frequents a variety of haunts, such as mountain heaths, thick furze, young plantations intermixed with coarse herbage, sedgy marsh-lands and riversides, and fences overgrown with briars and long grass in the cultivated country.

It usually utters its trill in the early morning and in the shades of evening, but I have heard it at midday in broad sunshine as well as after dark. I have seen it while so engaged sit on the top of a bush, while a Night jar was churring not far from it. The trill has been heard over three hundred yards away by an acute ear, but to some persons it is quite inaudible. The male sings in the vicinity of the nest. When its nest is approached it will sometimes show itself, uttering an alarm note which is like the noise of two pebbles knocked together.

When disturbed from her eggs, I have seen the female run in and out among the herbage, jumping like a mouse. I have then seen her stand looking at me within two or three yards, like a creature waiting to be fed.

I have often observed Grasshopper-Warblers fly across a ride in the plantations, and even over a fence of tall furze, when feeding their young.

Two clutches are laid in the season: the first in May or June, the second in July or the beginning of August. The eggs, usually six, often five, are sometimes spotted with warm reddish brown. Sometimes they have so many lilac specks as to give them a purplish tint. I have a set with pure white ground and bold red-brown spots.

The nest is composed of dry grass and moss, with a few dead leaves outside, no feathers or hair. It is placed on the ground, always overshadowed, among ling, furze, bilberries or grass, sometimes on the top of a stone-faced bank overgrown with briars, or at the foot of a dwarf willow in a marshy spot. I once knew of a nest in the middle of a grass field, like a Lark's.

Subfamily ACCENTORINÆ.

HEDGE-SPARROW. *Accentor modularis*, (Linnæus.)

Resident, and one of our most generally distributed species.

This modest, confiding little bird is found commonly; not only about homesteads and in sylvan scenery, but also in bleak, treeless districts, and on some islands where there are scarcely any landbirds. It breeds freely in every county and on such islands as Rathlin, Tory Island, Aranmore, Achill, the Arran Islands and the Saltees, but I was certainly surprised at receiving a Hedge-Sparrow's nest and eggs from that precipitous rock, the Tearaght, which is the outermost of the Basket group, off Kerry. This shows that the Hedge-Sparrow may almost rival the hardiness of the Wren.

Mr. Barrington has received specimens killed in October at Rathlin O'Birne lighthouse, off Western Donegal, and another killed in September at the North Arran Island, Galway. In Northern Donegal it is much commoner in summer than in winter.

Its sweet, simple song may be heard from October onwards, though seldom in December, but after the beginning of the year it soon becomes common and is one of the first indications of spring, while it may be heard as late as July.

For an insect-eating bird the Hedge-Sparrow endures frost wonderfully well, though in winters of great severity it is some-times found dead. In such seasons it will eat grains of wheat.

There is a record of one sitting on eggs on the 17th of March, but this is unusually early; Among the heathery wastes of Achill I have seen a Hedge-Sparrow with the head and nape almost grey. White specimens are extremely rare.

Family CINCLIDÆ

THE DIPPER, *Cinclus aquaticus*, Bechstein.

Resident, common on streams.

Much of Ireland being mountainous, it is not surprising that the Dipper is common and widespread, a series of pairs often inhabiting the course of the same trout-stream. It breeds in every county except Longford, and in many counties it is very common, but in Westmeath and Armagh, which are low-lying, it is scarce. Frequenting the mountain streams up to a great elevation, it also extends far into the valleys below where the streams have ceased to be rocky, and in such districts it inhabits the same haunts as the Kingfisher. It has been observed on the shores of Loughs Carra and Mask. Where suitable ravines run down to the sea, its nest may be found very

near the latter. In winter Dippers are more frequently seen in the lowlands. Mr. Barrington has one which was shot on Rathlin O'Birne, on 13th December 1889.

The Dipper sometimes builds in February. It often lays early in March, and a second brood is produced in the season. The number of eggs in Ireland is usually four, sometimes five. Great attachment is shown to the nesting-site, in which, after the first nest has been removed, a second is sometimes built the same season. An iron railway-ridge near Cappagh was thus restored to annually, the nest being built on an inner flange over the river. Holes in stone bridges are often used, and there the domed covering is impossible. A Dipper once built on a rock or stone in the centre of a stream. The nest resembled a mossy part of the stone, and the orifice was not eaved, nor inclined downwards as usual. Nests have been found on branches over the water, the entrance in each facing along the branch. A large nest, annually occupied, stood on the top of a post driven into the river-bed under a bridge, and attached to a cross-bar. Another was in a tussock of rushes and rank weeds growing against a bridge on the ground (Ellison, *Zool.*, 1890, p. 315). I visited a nest in a bank over-hanging the pool of a mountain waterfall. On my approach the young Dippers, which were fledged, but had evidently never quitted the nest, precipitated themselves into the pool, rowing themselves away from me with their wings under water, and only crept out when they got behind the waterfall.

This bird obtains its food beneath the water, and will sing joyously, perched on a stone in the stream, when other birds are mute and dying through severity of frost. It seems to sing best from October until spring, being most silent in July. It is also a night-songster. Its mode of alighting on, or dropping into, flowing water, disappearing, remaining submerged, reappearing gradually, leaping out and floundering in it, and the use of its wings under water are characteristic of this strange creature. I have never seen it elevate its tail as shown in Yarrell's woodcut. It does jerk its body when alarmed, but the movement is like a curtsey, and the tail is depressed for the moment.

Family PARIDÆ,

THE LONG-TAILED TITMOUSE.

Acredula caudata, (Linnæus.)

Resident, Numerous in many places. Breeds in every county.

From Thompson's statements this species seems to have been much less numerous and widespread in the early part of the century than it now is. It is a common woodland-bird through out the greater part of Ireland, becoming scarcer as trees diminish in the extreme west. But it is found at Glenties in Western Donegal, near Ballina, and Castlebar in Mayo, and has been taken in Achill Island, while on Lough Corrib in Galway, and in the Killarney district, it is very common. Though not usually occurring at light-stations, a flock of seven visited Inishtrahull on the 24th October 1895, out of which two were shot. This wild, rocky island is nine miles north of Donegal. Some observers notice this species more in summer and others are struck by the extra-ordinary numbers in our woods at times in winter. I cannot say that there is any regular local migration, but the bird seems

sometimes to absent itself irregularly for months together (Moffat).

Kinahan says the Long-tailed Tit has more pretensions to a song than any of its congeners, commencing it about the middle of February and ceasing in June. The song is delivered on a bush, and may be heard even in frost.

It often flocks with other Tits and allied birds in their winter hunt for insect food among the branches, but parties of one or more broods of this species more usually pursue their own way.

I have noticed nest-building commencing on the 17th of March, but the work takes about a fortnight. In the South the 9-11 eggs are laid in April, and the young sometimes fly before May. The sites chosen are very various, sometimes high up on the branch of an elm, or in a lichen-covered apple-tree, where the nest resembles a knot of the branch, or on the lateral branch of a spruce, with the entrance placed transversely, between two stems of spruce branches, one beneath the other above it. It is often in a furze bush. Sometimes it is attached only at the base, standing like a peaked beehive with the hole near the top. One in my collection is spangled with white scale-shaped spiders' nests. I have seen a nest in the same apple-tree as that of a Mistle-Thrush.

THE GREAT TITMOUSE. *Parus major*, Linnæus.

Resident and common. Breeds in every county.

The Great Tit is widely distributed through Ireland, being the most common of the family after the Blue Tit, except in wooded districts, where the Coal-Tit and Long-tailed Tit are more numerous. Being fairly hardy it frequents many localities very poor in trees. It may be seen in the squares and gardens of cities. There is not sufficient evidence to conclude that it migrates to any great extent, but Mr. Moffat observes an increase of this species in September in co. Wexford, and a specimen which was taken in October on a Wexford lightship has been sent to Mr. Barrington.

The song, or a repetition of various strange notes which take the place of a song, has been heard in August, September and October, but this usually commences in January if the weather be mild, and may be heard until the middle of June. In February and March the Great Titmouse will begin to sing some hours before sunrise and keep it up for three or four hours. Nor does it then cease, being the most indefatigable songster of the family. It occasionally utters its note at an elevation, and while in pursuit of food (Kinahan). It will mimic the call-note of the Chaffinch.

Mr. Noonan, gardener, Noan, states that this species will perch at the entrance of a beehive and rap away until a bee appears, when the Titmouse will take it to the nearest apple-tree, and, after eating the edible portion of it, return to the hive, repeating this over and over again. Mr. Longfield has found that Great Tits can be accustomed to take cheese from the hand in winter, and will remember and repeat the practice in subsequent years.

The nest of the Great Tit, usually built in the hole of a wall, is composed largely of hair and rabbit's fur, filling the floor of the chamber that contains it, though the nesting-cavity is only large enough for the bird to sit in. When, however, the brood increase in size they find their capacious mattress of hair very convenient. The eggs are usually found here in May.

THE COAL-TITMOUSE. *Parus ater*, Linnæus.

Resident and common. Breeds in every county.

This Titmouse is commoner than the Great or Blue Tit in many of the timbered districts in which it is resident throughout Ireland, but being more of a woodland species it is not so generally distributed. Along with several other birds, its range has kept pace with the increase of plantations, and it is wonderful how Coal-Tits find out isolated bits of planting in the remotest places. Thus, within the memory of residents in Achill it has taken up its abode in the plantations of Glendarary, and has even been obtained at Dugort. We have no evidence that it migrates, the light-keepers not having distinguished it.

The clear repeated cry which represents its song is sometimes commenced in the end of January, and may be heard every month until the end of June, though it is improbable that the same bird continues it so long, as the business of feeding the young must stop it.

Coal-Tits feed on the alder, and during the winter they frequent those trees in company with other Tits, Gold-crests, Creepers and Lesser Redpolls. But the plantations of fir are their great resort. I have seen a Coal-Tit attack the huge cone of a *Picea nobilis* and make the scales fly, soon leaving nothing but the main stalk.

This species does not resort to the vicinity of houses in hard frosts like the Great and Blue Tits, its habit of eating berries and seeds probably making it more independent. It lays in April or May, usually building in the hole of a stone-faced bank, and after making the foundation of green moss it lines it with a thick bed of rabbit's fur. This latter is sometimes mixed with cow's hair, feathers being few and exceptional. The male assists the female in making the nest.

THE MARSH-TITMOUSE. *Parus palustris*, Linnæus.

Rare. No specimen known to have been obtained since the time of Thompson and Kinahan.

Thompson states: "In a very few instances has this bird occurred to me around Belfast. It was observed at various seasons. The Marsh-Tit has been seen by R. Ball, Esq. only about Ballitore in the county of Kildare."

Kinahan says: "The rarest of the Tits. It has only come under my notice at Donnybrook (co. Dublin) in four instances. On one occasion I shot a hen and her three young birds at one shot (Proc. D. N. H. Soc., 25th Nov. 1854).

Kinahan also noted under the head of this species "Drogheda, 12th April 1854."

I have never seen the Marsh-Titmouse in Ireland, nor do I know of any Irish-killed specimen in existence, but I have a note of a Titmouse killed at Castle Bagot in co. Kildare about 1895-6, which may have been of this species. We have no proof that it now exists at all in Ireland.

THE BLUE TITMOUSE. *Parus caeruleus*, Linnæus.

Resident. The most common and widespread of the family. Breeds in every county.

Though the Coal-Titmouse may be more numerous in many wooded districts, the Blue Tit has by far the widest range, being found frequently in open as well as enclosed localities. It seems even less confined in its distribution than the Great Tit, and is probably the most numerous of the family in Ireland. It has spread to Achill, where I have seen it, and occasionally visits Rathlin, but seems absent from the Arran Islands, except on migration. Reports of the migrations of "Tits" from light-stations are unsatisfactory. There is usually no evidence to identify them with this or any other species of *Parus* (Barrington), but a Blue Tit has been identified on the Tearaght.

Kinahan described the song-notes as commenced towards the end of January and continued until late in July. The Rev. C. Irvine has heard them on the 25th of September.

In winter, both Blue and Coal-Tits flock with Gold-crests, Creepers, Lesser Redpolls, Siskins, and sometimes with Long-tailed Tits, in search for insect food among the trees.

I have usually found the eggs in May. The nest is begun in April, and contains feathers, which distinguishes it from that of the Coal-Tit. Holes in walls and stone-faced banks are more frequently used in Ireland than hollow trees, probably owing to the comparative scarcity of the latter. Among the strange nesting-places of this bird was a human skull, placed in a recess in the wall of a ruined church; the bird entering it through the occipital foramen, and there it brought out its brood. Another bird built regularly in the hollow of a metal gate-pillar, at Brockley park. Mr. Baker mentioned a nest with young on the top of a broken poplar, not under cover, but visible from the road. He saw the female on the nest and noticed she seemed busy arranging something. On going up only the head of one young bird was visible, all the others having been covered by the parent.

Family TROGLODYTIDÆ.

THE WREN. *Troglodytes parvulus*, K. L. Koch.

Common and resident almost everywhere. Found on the remotest islands.

No bird is so universally distributed in Ireland as the Wren. Familiar as it is about homesteads and plantations, it inhabits indifferently the precipices of the loftiest mountains, the most stupendous sea-cliffs, and uninhabited island rocks, where its lively song relieves the awful solitudes. Among isolated resorts of this little bird are Dursey Island, the Great and Little Skelligs (on the latter of which Mr. Turle found twenty or thirty Wrens' nests, including old ones), the Blaskets, the Arran Islands, Inish. bofin, Achill, Aranmore and Rathlin. A light-keeper on the Skelligs wrote in December, "the Wren is more plentiful the last four months" (Migration Report, 1885). And Mr. MacCarron, writing of the Wren on the Tearaght, said: "I have seen it plentiful there both summer and winter. I believe there are between 60 and 100 always there" (Migration Report, 1886). A certain autumnal migration takes place. Wrens are noticed in the above reports most frequently in October, and again in April, but also more or less in every month of the year, and appear at the remotest western rocks and at light-ships. The name "Wren" has, however, been sometimes misapplied to the smaller spring migrants.

Of its song, Kinahan wrote in 1853: "The Wren, though commencing later than the Robin, is more regular in the period of commencement of its song; once only during the last five years did he commence earlier than the beginning of November. He sings more vigorously during frosty weather, but is not so regular a daily singer as the Robin. During frost, I have oftenest heard his song. ...His song ceases about the middle of June." (Proceedings Dublin N. H. Society.)

Mr. Barrett-Hamilton notices a Wren's nest with eggs in February, but I have not found one before the beginning of April. The construction of the nest sometimes begins with the domed top. In another case where a Wren built in an orifice of a peat bank there was no dome, as the bank overhung the nest. Another contained incubated eggs, while a forsaken clutch that had not been sat on were buried in the materials at the bottom. A nest built in a whorl of dead fir-branches was composed externally of dead ivy-leaves, which appeared as if lodged there naturally.

A white Wren has been received by Messrs. Williams and Son, and a white-winged example has been noticed by Rev. A. Ellison.

Family CETHIIDÆ.

THE TREE-CREEPER.

Certhia familiaris, Linnæus.

Resident and common, but nowhere numerous. Breeds in every county.

In those parts of Ireland which are not destitute of large trees the Creeper is to be found throughout the year, and from its singular habits seems widely observed and better known than more numerous species. We cannot expect to find it on the treeless western seaboard, nor, as a rule, on the marine islands, but it has occurred even in Rathlin, where there are scarcely any trees. It does not, however, appear to migrate to any extent, and there is no evidence of its having occurred at a light-station.

Its song, uttered from March to May, sometimes in January or February, is not frequently repeated (Johnston). It has been syllabled ticka-tee-tee-tee-ticka-ticka, being usually uttered as the bird makes a pause in its progress up the tree-trunk, and holds its head sideways in a languishing attitude (Moffat).

During the winter months a Creeper or two may usually be met with in company with a flock of Tits and Goldcrests, though pursuing its search in so different a way.

When the Creeper is suddenly alarmed, or when it finds itself closely watched, it will remain motionless, unless the observer advances, when it takes flight. Thompson notices that it does the same thing when the tree it is on is struck with a stone.

Its eggs are laid in April, or more frequently in May, but I have seen a bird building on the 30th March. Creepers here frequently nest in holes of walls, or piers, under the roofs of houses, as well as in cleft tree-trunks. A pair built at Cappagh in the dense mass of an old cypress, among the crumbling matter lodged in its broom-like growth. Another pair bred for successive years between the wood-work of the verandah and the wall of Comragh House.

Miss Fairholme has observed a family group of young, that had just left the nest, and which roosted clustered together on a tree-trunk, like a huge scale of loose bark.

Family MOTACILLIDÆ.

THE PIED WAGTAIL *Motacilla lugubris*, Temminck.

Resident and common. Breeds in every county. Partially migratory.

This is a very generally distributed bird, and the only part of Ireland where it is not very common is the extreme west of Connaught and the Arran Islands. It is observed to visit Belmullet in winter and depart in spring; but it is resident on Rathlin Island and breeds there, as well R.S. on Tory Island. Thompson remarked that it was permanently resident in the northern counties of Ireland, but Mr. Hart observes that though common in summer near the north coast of Donegal, it comes further inland in winter.

The tendency of the Pied Wagtail to shift its quarters after rearing its young, and from season to season, is observable in Ireland as in Great Britain, and the assemblages formed in spring and autumn have been noticed not only on the coast, but sometimes in the heart of the country. That numbers arrive in Ireland in September is evident from the light-keepers' reports, and this movement is continued in October and extended to the most western points like the isles of Connaught, where so few migrants occur. In winter the influx of these birds is observed in the west of Cork. In March the return movement sets in, and lasts in the north and east through April and May; but the stray occurrences at light-stations at other times show how very restless this species is, except perhaps in January and June (Migration Reports).

The song is uttered occasionally all through the winter on fine days, and may be heard more or less in every month of the year. Early in the season this bird often sings on the ground, but later on it sings on a bush, wall, or house-top, or during sallies in the air (Kinahan).

The eggs are laid in April, but may be obtained as late as July; so that a second brood must sometimes be reared. Mr. Pentland describes the artifices of a Pied Wagtail to elude observation when returning to her nest. After running about for some time she flew to the ditch where she was nesting and went into a hole in the bank. In two minutes she came out and watched him. She then flew back and entered another hole. This she repeated several times, visiting a different hole each time. Finally she flew to the nesting-hole and remained there.

THE WHITE WAGTAIL. *Motacilla alba*, Linnæus.

Has been occasionally obtained on, or near, the coasts of Mayo, usually in April or first week of May, when small flocks have been observed; it may be of more frequent occurrence, but has probably been mistaken for the Pied Wagtail, *M. lugubris*.

Mr. R. Warren writes as follows:- "So little was known of the visits of this bird to Ireland, that Thompson mentions only one specimen as having been observed by the late Dr. Robert Ball in the co. Dublin on the 19th of June 1846, and remarks; 'As the bird was not obtained, its occurrence would not be inserted here without my perfect reliance on the knowledge and acute observation of my informant.'

"Nothing more was heard of this Wagtail until the 25th of April 1851, when I observed a solitary bird feeding in a barley-field on the island of Bartragh, co. Mayo: being attracted by its light-coloured back and sedate, quiet movements, I shot the specimen, and considering it to be the true *M. alba*, I sent it to my old friend, the late Dr. Harvey, of Cork, whose opinion agreed with mine as to its identity.

"On the 17th of August 1891 Mr. Good of Westport, co. Mayo, shot three young birds, his attention being attracted by the light-coloured plumage of the parent bird feeding there, and on submitting one of the specimens to the late Mr. A. G. More for his opinion, he considered it to be the *M. alba*, and was confirmed in his opinion by Mr. Dresser; and Mr. Howard Saunders, who lately examined one of the specimens, is also of the same opinion.

"The next occurrence recorded is that of the 19th of April, 1891, when I met with a pair on Bartragh, and obtained a fine male specimen, now in the Dublin Museum. The birds were feeding on a wet flat at the base of the sand-hills, about 300 yards from where the specimen of 1851 was obtained.

"In April 1893 Mr. Sheridan obtained an adult male on Achill Island, co. Mayo, which is now in the collection of Mr. R. M. Barrington.

"Mr. A. C. Kirkwood, of Bartragh House, on the 30th of April 1898, met with a party of five birds on the island, feeding in all oatfield, three of which he obtained. Again, on the 10th of May following, he observed a flock of fifteen birds on Bartragh; of these he also obtained three specimens, and presented two of them to the South Kensington Museum. After this flock of birds left, they were succeeded by a little party of five, which remained until the 19th of May, when another specimen was obtained for my collection.

On the 9th of June 1898, when driving in the company of Mr. Howard Saunders and Mr. R. J. Ussher, from Belmullet to Portacloy, on the North Mayo coast, a bird was observed on the bog close to the side of the road collecting the down of the cotton rush as if for its nest, and before it flew away was identified by Mr. Saunders as *Motacilla alba*.

All the birds observed by Mr. Kirkwood and myself on the island of Bartragh were much quieter and more sedate in their movements than the *M. lugubris*, evidently showing fatigue after their long flight from their winter quarters."*

(Robert Warren.)

THE GREY WAGTAIL. *Motacilla melanope*, (Pallas.)

Resident, frequent and widespread, but nowhere numerous. Breeds in every county.

This bird, too often misnamed "Yellow Wagtail," is in many counties more common as a breeding bird than the Pied Wagtail. It is to be found in almost every part of Ireland, an exception being the Dunglow district in

North-west Donegal. It is scarce in Western Connaught and Western Donegal generally, also in the flat parts of King's County, of Westmeath, and of Longford, where great bogs prevail. In Achill it is said to be a spring and autumn visitor. It has been observed in summer on Rathlin Island, and, though less inclined to migrate than the Pied Wagtail, specimens have twice been sent to Mr. Barrington from isolated light-stations in October, while others, if correctly named, have been observed from time to time during winter, even on the most western island rocks of Connaught. I have, however, never known this species to form flocks, a family party being the only assemblage seen. Grey Wagtails are given to shifting their quarters after breeding, but either they or others reappear from September onwards~ for they are frequently seen in winter about houses and yards. In the west of Cork the numbers of this species as well as of the Pied Wagtail increase in winter.

The Grey Wagtail loves haunts suitable to the Dipper, in whose close company it is sometimes found to breed, but it by no means

*In 1899 one was obtained on Bartragh, by Mr. Kirkwood, on 27th April, and a pair were observed there on a manure heap on 4th May.

confines its range to sequestered glens, nor to trout-streams rushing over stones. It commonly breeds on the Dodder even in the suburbs of Dublin, and in winter it resorts to Trinity College and the quays in the heart of the city. I have found its nest in a bank at the top of a low cliff flanking a tidal cove which formed the mouth of a small river, and have seen one of these birds pecking on a rock barely uncovered by the tide; but as a rule this species does not frequent the shore like the Pied Wagtail.

Its simple twittering song is very familiar to me. I have heard it in November and February, and have known it to be uttered on the wing. Kinahan has recorded it in every month but August and September. Though less obtrusive than the Pied Wagtail, this is not a shy bird with us. It comes close to our doors and runs along the cornices of the house in winter, and when feeding its young it will sit perched on a tree or bush until approached very closely.

It usually builds near running water in a hole of some wall or building, such as a mill, or among luxuriant ivy, sometimes in a horizontal rock-fissure. Grey Wagtails have bred in the walls of my outside buildings and yards for over forty years, but not always near the stream that turns our water-wheel. One year the nest was in an empty joist-hole, close above a farm boiler in daily use. A plant of *Geranium robertianum* concealed this nest. Another nest was in the trailing ivy on the wall of the stable-yard, beside the main thoroughfare and low enough for the hand to reach it. The nest of this bird is smaller and neater than that of the Pied Wagtail and is lined with white hair, not with feathers. The first clutch is laid early in April, but this is succeeded by a second. The eggs are usually five in number, but six are not rare. Mr. Palmer has observed a clutch of five eggs not completed till the 21st April. The young were hatched on the 4th May; and left the nest on the 16th of that month.

The eggs vary much in colouring. Some are of an almost uniform pale yellowish-buff, but usually they are spotted or freckled with yellowish-brown, and have often a dark hair-like streak. In some there is an undefined undershell zone of a livid greenish hue. I have a set almost white, and another with white ground and very distinct markings of deep reddish-brown and undershell-grey. Successive clutches of this very peculiar type were laid on my premises, but the parent bird was probably killed, and later in the season eggs of the ordinary type were laid in the same corner of the laundry-roof.

THE YELLOW WAGTAIL. *Motacilla raii*, (Bonaparte.)

Summer-visitor. Remarkably local, breeding on Lough Neagh in Ulster, and Loughs Corrib and Mask in Connaught.

This beautiful species is unknown in the greater part of Ireland. Its two colonies are separated by more than a hundred and twenty miles, and its haunts in each are dissimilar. From the north of Lough Mask to near the south of Lough Corrib it breeds on uninhabited islands, chiefly of stones or rocky, where among the short sedgy grass I have found its nest. The late Lord Lilford discovered a nest beside the River Corrib above Galway in 1853 or 1854 (*Zool.*, 1892, p. 389), but it was Mr. W. H. Good who led Mr. Warren and me to search for it on the Connaught lakes.

The Lough Neagh colony, so long supposed to be the only one, seems divided. I found the bird common at Toome Bridge, and thence down the Ban to Lough Beg, and again along the south shores of the lake in the counties of Armagh and Tyrone, but could not trace it on the east side near Antrim town. The Armagh shore is a peat district where turf-cutting is done extensively, and the nests are often placed beside banks or sods of peat, shaded perhaps by a plant. I saw one among young oats under a thistle. Though the bird was abundant

near the lake I saw none at any distance from it; but the Yellow Wagtail is stated to range inland in co. Armagh two miles, and to arrive about the 10th April.

The only recorded instance of this bird breeding in another part of Ireland was in 1868, when Mr. E. Williams found a nest with young on the western side of Dublin. Kinahan had noted it as an occasional summer-visitor to the Dodder on the south side of Dublin, and others have observed it there as well as near Malahide and Bray in summer, while in September it seems to occur regularly about Malahide and Baldoyle.

Thompson noticed Yellow Wagtails in July and August about Belfast Bay (III.438).

In South Wicklow the Rev. Allan Ellison has noticed stragglers in April and May.

The only county from the light-stations of which specimens have come to Mr. Barrington is Wexford. He has three from the Tuskar, one taken in May and two in September, also one from Hook Head in September, all in different years. "Golden Wagtails" have also been noticed in autumn near the town of Wexford. The Wexford migration route taken by so many other species would thus seem to be used by the Yellow Wagtail. We have little clue as to its subsequent courses towards the two distant breeding-localities, but Mr. Neligan considers the Yellow Wagtail to be a regular visitant to the neighbourhood of Tralee, though he never had reason to believe that it nested there. There is a specimen in his collection at Tralee; and Mr. Parker of Castle Lough, on Lough Derg, has one that was shot in March near his place while feeding in a field where oats were being sown. In Achill Mr. Sheridan obtained a female on the 15th May 1892. This bird has twice been observed in Donegal and twice in Western Tyrone, while records from some other northern counties await corroboration.

THE MEADOW-PIPIT. *Anthus pratensis*, (Linnæus.)

Resident, abundant, and distributed everywhere. Numbers arrive in Ireland in October.

This is one of our commonest and most generally distributed birds. It breeds in all sorts of localities from the mountain-tops to the remotest islands, and frequents the desolate moors of Mayo as well as the pasture-land of the richer counties. The only district where I have not observed it is the country round Dunglow, so deficient in land-birds. Yet it abounds in the neighbourhood of the coast, and nests even among the Blaskets and on Tory Island. On Ireland's Eye it outnumbered the Rock-Pipit.

In winter its numbers diminish in the extreme north of Ireland, and the same observation has been made in South Wicklow, Dublin, and in Kildare. Mr. Barrington's collection from light-stations shows that there is an increase of occurrences in March. No examples have been taken there in June or July, but in October the largest numbers occur, nearly two-thirds of those captured having been from the Wexford coast. Mr. H. Blake Knox states that at Dalkey, on the Dublin coast, during the autumn months, and of late as December, flocks may be seen crossing the channel from the east. During winter flocks are common in the south generally. They visit the west of Cork in great numbers in autumn and remain during the winter. Mr. Warren, on a September morning, in the Island of Bartragh, Killala Bay, observed a flock of two hundred which took flight towards shore.

Kinahan remarked: "The Titlark is truly a summer-songster. Its song is hardly ever commenced before February, and ceases before the end of July. You seldom hear it in early spring unless the day be soft and open, though it may sometimes be heard on raw frosty mornings. The females of this bird sing, as I proved by dissection. It rarely sings on the ground."

The Meadow-Pipit breeds, with us, in April, May, and June. I have one set of its eggs of a decidedly green hue.*

THE ROCK-PIPIT. *Anthus obscurus*, (Latham.)

Resident in limited numbers all round the Irish coasts and islands.

This bird, though less common on the flat parts of the east coast, is resident on the shores of every maritime county. It increases in numbers in the wilder and more precipitous parts, and loves the islands exposed to the surge of the Atlantic. It enlivens the most awful cliffs with its simple notes and easy movements. Still it is at home on parts of the coast that are low, and is common on the Louth shore. I have met with it in June up the Shannon estuary as far as Glyn in the co. Limerick.

I have no evidence of the migration of the Rock-Pipit further than that it becomes more common in winter on the flat part of the coast. The few specimens in Mr. Barrington's collection are from island rocks, where the bird has probably been resident, and it is a significant fact that none have been sent him from any light-ship.

A light-keeper on Blackrock, Mayo, wrote in 1890:- "The Titlarks here were off the rock from the beginning of December till early in February. I never saw them driven away before, and I am eighteen years on the rock and islands."

On the cliffs of the mainland the Rock-Pipit usually breeds in spots difficult of access, as in a mass of *Asplenium marinum* growing in a recess high above the sea, or in a miniature cave, or hole under a large stone with a plant in front to hide it; but on uninhabited islands I have seen it much lower down, in a hole under the margin of vegetable soil surmounting the rocks, at the extreme end of a little narrow cave above the beach, and on a shelf of a small marine cavern into which the sea flowed. Along the top of the cliffs at

*"The Tree-Pipit is thought to have been observed at Ballitore, Raheeney, Portmamock, and Irishtown, but no specimen has been obtained in Ireland."

(List of Irish Birds by A. G. More).

Inishmore, Arran Islands, is a raised beach of huge stones thrown up by the tremendous Atlantic rollers, but some yards from the edge. From these masses of stone I saw a Rock-Pipit's nest taken with eggs in the beginning of June.

Laying takes place in April or May, usually in May. The eggs may be distinguished from those of the Meadow-Pipit by their larger size, and are more distinctly freckled and spotted. Some are heavily marked with warm reddish-brown; others are french white or greenish-white, with greyish-brown specks, and not much darker than eggs of Pied Wagtail; while others are speckled thickly with dark brown or boldly spotted with same and with undershell-grey, a colour which frequently occurs. I twice got from the same island off Kerry eggs of a pinkish-ground with specks of red and lilac; resembling, in fact, a variety of the eggs of Tree-Pipit.

Family ORIOLIDÆ.

THE GOLDEN ORIOLE. *Oriolus galbula*, Linnæus.

A casual visitor in spring and summer of not very frequent occurrence.

Of about forty-seven instances, seven are stated to have occurred in April, seventeen in May, one in June, and four in summer." Several birds have been picked up dead at different times, and others taken alive. In some cases small flocks were seen, in others pairs. Nearly all the occurrences took place in maritime counties, twelve in the county Cork, seven in Waterford, and six in Down.

Kerry. - One obtained in a valley above one of the bays, summer 1830 (Thompson); one taken near Ventry 11th May 1881 (E. M., in *Field*, 4th June 1886); a young male shot near Ventry 13th May 1881 (Ibid.); one shot in the north of the county about 1886 (Ron. E. de Moleyns). A female killed at the Skelligs, 23rd May 1899 (Barrington).

Cork. - One observed between Middleton and Castlemartyr for months in summer 1817 (?) (Thompson); one shot near Bantry, presented to the Cork Institution 1823-(Ibid.); one observed for some time

at Cahermore near Roxborough about 1838 (Ibid.); one obtained by Moss near Youghal before 1858; one caught alive, Barnabrow, Cloyne, B May 1862 (Hackett, in *Field*, 27th May 1876); a female caught alive near Oysterhaven, Kinsale, 15th May 1867 (Ibid.); one obtained near Roscarberry 4th May 1869 (Ibid.); a male shot near Castlemartyr 21st April 1870 (Ibid.); a female shot at Friendly Cove, Bantry, 23rd April 1870 (Ibid.); five seen same locality 23-27 April 1870 (*Zool*, 1870, p. 2222); a male

found dead near Bandon 1st May 1876 (Hackett, in *Field*, 27th May 1876); one taken alive near Goleen April 1891.

For Bulbul or Gold-vented Thrush, *see* Appendix.

Waterford. - One shot at Ballinamona in 1824 or 1825 (Thompson); a male shot near Woodstown 14th June 1839 (Burkitt); remains of one found,

Tramore Bay, about 1848 (Ibid.); one shot near Flower Hill, before 1858 (B. Drew); a pair, male and female, shot Dungarvan Bridge 1845 to 1847

(Thompson); one shot in co. Waterford before 1856 (D.N.H. Soc.); one observed at Glenbeg before 1883 (Mr. E. Foley).

Clare. - A small flock seen near Ennis about 1847 (D.N.H. Soc.); two shot at Roxton, near Corofin, years before 1862 (Ibid.).

Kilkenny. - One shot at Mullinabro, near Waterford, 3rd May 1862 (Ibid.).

Wexford. - One shot in the county May 1823 (Thompson); one shot near Ferns, summer 1837 (Ibid.); an adult male shot near Duncannon Fort 21st April 1850 (Ibid.). A female found dead at Kilmore, 5th or 6th May, 1899 (Gibbon).

Wicklow. - One obtained near Arklow, summer 1827 (?) (Thompson);

a female near Bray, May 1862 (D.N.H. Soc.).

Kildare. - One in co. Kildare

(Sinclair).

Dublin. - One frequented Glasnevin Gardens about 1871 (*Zool.*, 1876, p. 4956); a female found dead at Nutley 30th April 1876 (Ibid.).

Galway. - Adult male, Rinvyle, 20th April 1891 (*Zool.*, 1891, p. 318).

Roscommon. - One seen some years before 1893 (Mr. J. W. Warburton).

Down. - A female, Donaghadee, 11th May 1824 (Thompson); a male seen same place soon after (Ibid.); one found dead 1878 (Lloyd Patterson, in Field, 13th June 1891); a male found dead, Dundonald, April 1880 (Sheals); another male found dead, Ballynahinch, May 1881 (Ibid.); one near Belfast (Mr. H. Blake Knox).

Donegal. - One near Mount Charles 1866 (?) (*Zool.*, 1891, p. 300); a female near Dawcross 24th May 1879 (*Zool.*, 1892, p. 129); one found on shore, Burton Port, May 1891 (Field, 13th June 1891).

Family LANIDÆ.

THE GREAT GREY SHRIKE.* *Lanius excubitor*, Linnæus.

Casual visitor in autumn and winter.

This is the only Shrike that has occurred repeatedly in Ireland. We have twenty-three records of its capture, and if we include the instances in which it has been seen by presumably competent observers the instances will amount to about thirty. The majority of these took place in the northern half of this island, and Cork and Sligo are the most western counties reached.

It has once been seen and once obtained in August; the other

*Giralcius Cambrensis wrote: "The Irish *croeria* are white. It is the instinct of these birds to impale beetles on a thorn," &c. It has been inferred from this that the Great Grey Shrike was not unknown in Ireland in the twelfth century (*Zool.*, 1881, p. 437).

occurrences range from October instances being in December and January.

Cork. - One procured Dear Cork in 1824, a second near Carrigaline in October 1844, and a third obtained in the same quarter early in August 1845 (Thompson, I. p. 112).

Waterford, Tipperary. - Thompson states that it is said to have been met with in both counties.

Wexford. - One seen near Wilton Castle in January 1897 by Dr. N. Furlong of Enniscorthy.

Queen's Co. - One killed on the 18th December 1847 (Thompson, I. 112).

Kildare. - One received by Messrs. Williams & Son from Mr. H. E. Joley, Clonbulloge, on 5th December 1891.

Dublin. - One procured on Shankill Mountain in 1822 or 1823; another in Phoenix Park in 1831 (?); one killed at Ballycorris Bog about 1830 (Thompson, III. 436); one seen and followed by Watters on the Dublin mountains 10th August 1850, and another followed by Mr. Rathborne near Dunsinea in the winter of 1891-2.

Westmeath. - One obtained at Knockdrin previous to 1834 (Thompson, I. 112).

Longford. - One obtained at Longford on 28th December 1887, now in Mr. Barrington's collection (has only one wing-bar).

Louth. - One shot by Montgomery at Beaulieu and exhibited by him on 9th December 1853 (D.N.H. Soc.), is now in the Sci. and Art Museum. It has one wing-bar.

Sligo. - One was killed at Mullaghmore about 1831 or 1832 (Thompson).

Down. - The first mentioned by Thompson was shot in this county about the beginning of the century; an adult male was shot at Kilmore 15th January 1845; a male was obtained near Lisburn on 27th December 1883; and a female at Waringstown on the 10th March 1885; a specimen in the Science and Art Museum, Dublin, is labeled Comber, which has one wing-bar.

Antrim. -Templeton observed one early in the century: another was shot at Echlinville late in the autumn before 1829; an adult male was killed at Beechmount near Belfast November 1824; another Grey Shrike accompanied it. "In a neighbouring locality" one was shot in January 1835. (These three last were seen by Thompson.) A female was shot at Carnmoney on 13th January 1877

(*Zool.*, 1877, p.107).

Londonderry. - An individual which had been caught near Garvagh and escaped was shot 16th November 1846 (Thompson.)

Donegal. - Archdeacon Cox obtained one shot near Dunglow in 1860 and gave it to the Dublin Natural History Society.

THE RED BACKED SHRIKE. *Lanius collurio*, Linnæus.

Has once occurred.

A male specimen, still in the Belfast Museum, was shot on the 10th August 1878, at a glen near Castlereagh, co. Down, about three miles from Belfast. It was said to have been one of a party of five or six (*Zool.*, 1878, p. 437).

THE WOODCHAT SHRIKE. *Lanius pomeranus*, Sparrman,

Has once occurred at a Wexford light-ship.

In 1893 Mr. Barrington received a leg and a wing Of a bird of this species, which was killed on the night of the 16th of August by striking the lantern of the Blackwater Bank light-ship, off the Wexford coast. It was subsequently identified by Mr. Howard Saunders, who possesses the skin of a young male Woodchat Shrike in precisely similar plumage.

This is the only known instance of the occurrence of the bird in Ireland. It is the sixth species that has been added to the Irish list by specimens sent to Mr. Barrington from island rocks or light-vessels (*Ibis*, 1899, p. 158).

Family AMPELIDÆ.

THE WAXWING. *Ampelis garrulus*, Linnæus.

Rare and irregular winter-visitor. Has occurred nearly fifty times, chiefly in the east and north.

The Waxwing has been met with most frequently in the counties of Dublin, Down, Antrim and Londonderry. Two or three were obtained in the autumn, but the majority of those whose dates we know occurred in January and February; a couple in March.

Of the seasons marked by the immigration of this species into Great Britain the winter of 1849-50 witnessed the capture of Waxwings in Kerry, Cork, Waterford, Wexford, Dublin, Longford, Roscommon and Antrim; while in the first quarter of 1893 eight were taken in Wicklow, Louth, Galway, Antrim and Londonderry. Some of these visitors are stated to have fed on berries of hawthorn, holly and mountain-ash.

Kerry. - Several instances (Andrews); two seen and one shot at Milltown, December 1849 (Thompson).

Cork.- Castle Martyr, about 1820 (Ibid.), three or four seen, one shot near Carrigaline, January 1850 (Thompson, Harvey).

Waterford.- March 1850 (Kinahan).

Wicklow. - Blessington, autumn 1882 (Scott in Field), Delgany, January 1893 (Williams in *Zool.*).

Clare.- Burren (Andrews, D.N.H, Soc.1857).

Tipperary.- Ballybrado (Harvey) .

Carlow. -Near Burton Hall, 1822-3 (Thompson).

Wexford and **Carlow** Mountains. -Three instances, 1822 -1839 (Thompson).

Wexford. -21st January 1850 (Ibid.).

Armagh.- Near Portadown, 10th January 1895 (Thoms Quin).

Dublin. - Near Malahide, 1827 or 1829, in Dublin Museum (Sinclair); a male, near Dublin, January 1829 (Thompson); Ardtane, January 1829 (Ibid.); Portmamock, 1835(?) (Ibid.), four from the 19th to the 25th January 1850 (Ibid.); 0£ these one was

shot at Sandymount and one at Crumlin(Kinahan); CastleofT'iminon, 21st January 1851 (Watters).

Louth. -Dundalk, 30th March 1893 (Williams).

King's Co. -Edenderry 22nd August (?), 1875 (Longworth Dame in Field).

Longford. -Two near Lanesborough January 1850 (Thompson).

Galway. - Craughwell, 18th March 1893 (Williams); Ballinasloe, 14th January 1895 (Ibid.).

Roscommon. - Two near Rooskey, January 1850 (Thompson).

Sligo. -Lissadell, before 1893 (Col. Irwin).

Down. - Tollymore Park (Thompson); Castlereagh Hills, 1825-6 (Ibid.); Ballymacarret, 6th February 1835 (Ibid.); Same place 7th February 1835 (Ibid.); Portaferry immature male, 23rd February 1894 (Paterson in *Zool.*).

Antrim.: Colin Glen, 1820 or earlier (Thompson); Milltown, 1820 or earlier (Ibid.); a male, White Rock quarry, 17th January 1850 (Ibid.); several seen, one killed, near Ballymena, January 1850 (Ibid.); near Craigs, January (?), 1893 (Barton); Portglenone, January(?) 1893 (Ibid.); Ballinderry, 22nd February 1893

(*Patterson in Irish Nat.*).

Londonderry. - (*Mag. Nat. Hist.*, Thompson); Newtown, Limavady, November 1831 (Thompson); Ballynagard, 31st January 1893 (Campbell in Irish Nat.); near Londonderry January 1893 (Ibid.).

Donegal. - Dunfanaghy, 1881 (Hart in *Zool.*) ; another in Donegal (Williams in More's note).

THE SPOTTED FLYCATCHER,

Muscicapa grisola, Linnæus,

A common summer-visitor, breeding in every county, but somewhat local.

The Spotted Flycatcher is nowhere numerous, but several pairs sometimes breed in the same locality, Partial as it is to the vicinity of trees, this is by no means exclusively a woodland species in Ireland, for I have seen it about a few elder-bushes beside a solitary cottage near a lonely moorland lake in the Donegal mountains, and have met with it elsewhere in the western parts of that county, as well as about the gardens on the Saltee Islands. It is believed to be increasing, and has extended to Achill Island since the Glendarary plantations have grown up.

It usually appears in the second week or middle of May, though Mr. Moffat has observed it in co. Wexford on the 20th and 26th April in different years, and Mr. Barrington has a skin of one taken on the Tuskar on the 19th April.

In autumn Flycatchers have been observed in our eastern counties to collect together and draw down towards the sea. The species does not depart until September, but the only occurrences in October I can cite are of specimens received by Mr. Barrington from Blackrock, co. Mayo, and from the Tearaght, co. Kerry, the most remote western rocks. In the end of November 1897 another was Bent him from the Tuskar.

I have seen the nest of this bird among the upturned roots of a larch blown down in a lonely hill plantation, and Flycatchers frequent the natural wood on the shores and islands of Lough Erne; yet so indifferent are they at times to human presence that I have noticed one on her nest in the branch of a creeper growing right over the low doorway of a cottage. Probably no bird will endure the disturbance of her home in the same way. A boy brought up to my house two Flycatchers nests containing eggs which he had taken from the branches of fruit-trees on the garden walls. I removed from each a cracked egg and made him replace the nests; next day the birds were sitting in both nests, and hatched their young in them. In another case a Flycatcher built inside the deserted nest of a Thrush, and included the Thrush's eggs in the base of her nest; a cat pulled down the double nest before the Flycatcher had laid, but on its being loosely replaced on the branch she took possession of it and laid there (Moeran in Field, 26th June 1886). This species has been known to bring out a second brood in the same nest and in the same season

(*Field*, 24th August 1872).

In a cold, wet summer, when flying insects were scarce, a Flycatcher has been observed descending to the ground to pick up an earthworm (*Zool.*, 1886, p. 295).

Family MUSCICAPIDÆ.

THE PIED FLYCATCHER. *Muscicapa atricapilla*, Linnæus.

Accidental visitor. Has been taken seven times round the coast on migration.

The first Irish specimen, an adult female was shot on the spring migration by Mr. Warren at Moyview, near Killala Bay, co. Sligo, on the 19th April 1875. It is in the Science and Art Museum, Dublin.

Mr. Barrington has since then obtained six specimens from island rock lighthouses off the coasts of Kerry, Cork and Wexford, on the autumn migration. These are represented in his collection either by mounted skins or by legs and wings; in the latter form specimens first reached him in 1886.

An adult female, Moyview, co. Sligo, 19th April 1875.	One, immature (?), Tuskar, co. Wexford, 28th September 1888.
One, probably immature, Tearaght, co. Kerry, 20th September 1886.	One, immature, Fastnet, co. Cork, 30th September 1888.
One a young male (?), Fastnet, co. Cork, 5th October 1886.	One, immature, Tuskar, co. Wexford, 7th August 1890.
	One, immature (?) Fastnet, co. Cork, 8th September 1896.

THE RED-BREASTED FLYCATCHER. *Muscicapa parva*, Bechstein.

Rare and accidental visitor on the autumn migration.

Has four times occurred (once on the 24th September, and thrice near the end of October), at isolated light-stations in Kerry, Wexford and Donegal. All the specimens were obtained by Mr. Barrington. Three of them are immature.

The first was killed striking the lantern of the South Arklow Light-ship, off the Wexford coast, on the 23rd October 1887. The entry made by the lightkeeper, Mr. Wall, was: "Several small birds from 7 P.M. to 5 A.M. about lantern. Wind W.S. W., fresh, gloomy. Several killed and fell overboard. Two sent by post." Of the two birds sent, one, whose skin is preserved, was of this species; the other was a Black Redstart (*Zool.* 1888, p. 391).

The second was shot by Mr. James on the Tearaght Rock, off Kerry, on the 20th October 1890, and is mounted (*Ibis*, 1891, p. 585; *Zool.*, 1891, p. 186).

The third was killed striking at the Tory Island lighthouse, off the Donegal coast, on the 28th October 1894. Leg and wing preserved.

The fourth was killed striking the Blackwater Bank Light-ship, off Wexford, on the 24th September 1898: apparently adult, but only the leg and wing were sent.

Family HIRUNDINIDÆ.

THE SWALLOW. *Hirundo rustica*, Linnæus.

Summer-visitor, the most numerous of its family; generally distributed, except on mountains and moors. Scarcer in the extreme west.

This welcome bird spends the summer half-year with us, enlivening almost every habitable part of the land With its active flight and cheerful twitter. It is found everywhere except on tracts as desolate as the moors of Mayo. It is also absent or very scarce on the Arran Islands, Inishbofin and Achill, though it breeds in out-houses on the Saltees and Rathlin Island. There are many records of its appearance in March, but the first half of April is the usual time of its arrival; indeed, in the bleak counties of Tyrone and Donegal, and also in Mr. Warren's district near Ballina, Swallows are seldom seen before the latter half of the month. The migration of this species appears to extend over several weeks, for at favourable stations, like the Tuskar, Swallows have been noticed passing west almost daily from the middle of April until the 12th June, but the great majority arrive in May (Migration Reports). Towards the end of September there are great assemblages of these and other Hirundines at favourite trysting-places. The bulk of the species then take the opportunity of any settled weather to depart, nevertheless many are still seen throughout October, fresh bands passing; after an interval, through

districts which the usual Swallow inhabitants have quitted. Exceptional instances occur in November. Even December is not without records, though these are exceedingly rare.

The song of the Swallow seated on the roof may be heard before daylight. The bird usually breeds with us in any open buildings like cow-houses, placing its nest on the horizontal roofing-timbers, and it often resorts to a deserted house. In one respect, as Thompson and Watters have remarked, the Irish Swallow builds differently from the English bird. I have never known it to nest within a chimney, though I have repeatedly seen Swallows' nests in limestone caves which were apart from human abodes. The nests in these places were never beyond the reach of daylight. On the Lower Lake at Killarney there are numerous caverns in the lime-stone shores and islands. One of these is called "Swallow Island" from the Swallows which breed in its caves. These birds have also been found nesting in marine caves on the coasts of Dublin and Cork (Killahan and Barrett-Hamilton). I have found a nest under the arch of a bridge in a mountain-district; while another nest was found in Mayo under a low arch beneath a road, and was placed on a jutting stone, within six inches of the water. Another nest was in a hole in a wall, the orifice being partially built up with mud (Darling, in *Zool.*, 1883, p. 340).

White or cream-coloured Swallows have often been obtained. Such individuals are apt to be chased by other birds of their own species.

THE MARTIN. *Chelidon urbica*, (Linnæus.)

Summer-visitor. Breeds in every county, but is more local and less numerous than the Swallow.

The latter half of April is the most usual time of the arrival of the Martin, which comes later than the Swallow, but there are records as early as the 25th March (*Irish Nat.*, 1894, p. 115). Thompson gives the middle of April as the ordinary time of its appearance near Belfast. The majority leave in September, but Martins are frequently observed in October. Mr. Moffat has noticed the species in that month for six years between 1885 and 1897 in co. Wexford. It has been several times recorded in November, and once on the 13th December when a House-Martin was observed for hours at Annerville near Clonmel.

The Martin in Ireland is seldom numerous, except in the vicinity of its breeding colonies, or in the Autumn gatherings before migration. Throughout the country its resorts are few and far between, but sometimes a few suitable houses in a wild district, a battlemented castle, or the cornice of a bridge will be used by several pairs for a breeding-place. Thompson found a numerous settlement under the arches of Toome Bridge. The larger buildings in towns are usually resorted to, but the most noticeable colonies are in the marine cliffs in places where these overhang, as at the mouth of a large cavern. Martins frequently nest in haunts of this kind along the coasts of Munster, Leinster and Ulster, and on some of the islands, as Lambay and Rathlin. In the vicinity of precipitous coasts they keep to these places, and no houses in the neighbouring districts are resorted to. I have not heard that any breed in those cliffs of the west coast which face the great swells of the Atlantic. I think not, but I have seen Martins building under the balcony of Tarbert lighthouse in the Shannon estuary. At Howth lighthouse, when the Starlings finish breeding in the ventilator-holes of the tower, the Martins succeed them there (Migration Reports). Mr. Jameson found a Martin's nest inside a deserted house among rafters. Thompson relates an instance observed by one of his informants in which Martins built up a Sparrow in their nest of which it had possessed itself. A cream-white Martin has been noticed, the parts ordinarily white showing by contrast with the rest of the plumage.

THE SAND-MARTIN. *Cotile riparia*, (Linnæus.)

Summer-visitor. Breeds in every county. More frequent than the House Martin.

This bird is somewhat local from the nature of its breeding-haunts, yet its colonies are well distributed through Ireland, both in the sand-banks of the coast and inland. It is to be found, oftener than others of the family, in Western Connaught and Donegal; but I have no record of its nesting on any of the marine islands, although it is occasionally noticed as a wanderer to these.

It comes before the Swallow, and its appearance has been noticed as early as the 20th of March, but it usually arrives towards the end of that month or early in April. These seasons seem to hold good for most of Ireland, but in Queen's County the observations of Mrs. Croasdaile indicate that it reaches that country more frequently after the middle of April, and there it generally disappears before the end of August. Nearer to the

coast, it remains until the end of September, and has on many occasions been observed in October; I have seen it as late as the 20th of that month, while others have noticed it a few days later.

The breeding-places of the Sand-Marlin are selected irrespective of their vicinity or remoteness from human haunts; the lonely drift-capped islands of Loughs Corrib and Mask, the railway-cutting, the sand-cliff by the sea, the low river bank, and the face of a peat-bank from which turf has been cut, are all used to form its burrows in. I do not find any records of its nesting in peat-banks, but six counties can be named where such is the case, and probably others exist. Standing close to the face of a wall of peat, an old excavation some twelve feet high, in the co. Tyrone, one may watch the numerous Sand-Martins fly in and out of their holes in it. Mr. G. H. Kinahan states that these Martins build in a rotten granite cliff near Hacketstown, Carlow; but a more unusual breeding-place was discovered by Mr. Warren on an island in Lough Cullen, co. Mayo. He there found the ruins of a circular castle or fort some sixty feet in diameter and twelve or fifteen high, the interior being filled up with rubbish and overgrown with grass and nettles. Sand-Marlins were passing in and out of the crevices of the walls where the mortar had fallen out. He pulled out part of a nest with a rod. Mr. Blake Knox has found, in a bank near the sea, nests composed of damp sea-weed lined with drier but still coarse sea-weed. The Rev. A. Ellison found one nest composed of a large handful of dry brown scales from the expanding buds of the beech, though neighbouring nests were, as usual, built of straw and white feathers.

White varieties of the Sand-Martin have been several times obtained in Ireland.

For Purple Martin, see Appendix,

Family FRINGILLIDÆ. Subfamily FRINGILLINÆ.

THE GREENFINCH. *Ligurinus chloris*, (Linnæus.)

Resident and very common. A migration takes place into Ireland in winter, when Greenfinches resort to the western coasts and islands.

This is one of those species which, breeds commonly in every county and remains in its breeding localities through the winter; except in exposed inland districts. In such it is rarely found after the birds have formed into their autumn Hocks and moved away. From the bare coast districts of Western Galway, Mayo, North-west Donegal, and Rathlin Island, it is usually absent in the breeding-season, but is there known as a winter-visitor in Hocks. Such Hocks, accompanied by Chaffinches and Linnets, have been observed in Achill from November to March (Pike; in *Zoologist*, 1875). A few also now remain to breed there (Sheridan). The increase in winter is decidedly marked in the west of Cork.

Light-keepers' reports show that large numbers of Greenfinches come to us from Great Britain in autumn. They are observed arriving on the coasts of Leinster, and less numerous on those of Down and Antrim, while the movement along the southern coast is frequently noticed at the Fastnet off Cape Clear, and Hocks sometimes frequent the Tearaght for months together, from November until March. What they find to eat on that barren rock it is hard to say. The Arran Islands are less frequently visited. At Broadhaven, the north west corner of Ireland, about eighty were observed going south on 23rd September 1886 (Migration Reports).

Both Kinahan and Rev. C. Irvine state that the song is heard from the end of February to the end of June or first week in July. It is occasionally renewed in August or September. The habits of the Greenfinch in Ireland do not differ from those described in the standard works on British Birds, but an exceptional case of early breeding in Wexford is mentioned by Thompson, when a nest was completed by the 26th March. A nest in my collection, from a district near this coast, is partly composed beneath a piece of fishing-net. Bents and fine roots come next, with a lining of black horsehair. Six eggs are rarely found in this country.

In the Dublin Museum is a specimen which is believed to be a hybrid between the Greenfinch and the Linnet.

THE HAWFINCH. *Coccothraustes vulgaris*. Pallas.

Rare and irregular winter-visitor. Has occurred in all quarters of Ireland.

I have eighty-five records of the Hawfinch (usually of a single bird, but sometimes of many), from twenty-three counties, north, south, east and west. In two counties only, Dublin and Tipperary, have the visits of this species been regularly repeated for a series of years, but Cork stands third in frequency of occurrences. Three

examples were taken at Wexford lighthouses in October and November 1897, and one at a Waterford lighthouse (Mine Head) in November 1898 (Migration Reports). These are the only instances from light stations, but Mr. Sheridan obtained a male in beautiful plumage at Achill in October 1897.

In certain seasons Hawfinches have occurred at places very far apart. Thus in January and February 1890 specimens were taken in Carlow, Queen's Co., Dublin, Leitrim and Monaghan, and in the last quarter of 1897 in Wexford, Achill and Down.

The fluctuation of the numbers of Rawfinches in different seasons has been observed in the Phœnix Park, Dublin, which is more constantly visited by them than any other locality known in Ireland. Mr. Godden, the head-keeper there, wrote to me in 1894:

"Many years ago they came every winter to the park, then they seemed to quit it for about twelve years, until six years ago I noticed them return, and five birds stopped in the park. The year following I counted twenty-five together. That was the largest number I ever saw. Last year three birds, and this only one. They come about the end of November, but the bird that stopped with me this season came on the 4th October. They leave about the end of February. I noticed one to stop two years ago until April and then disappear. They certainly do not build here or I should notice them. One thing I could not understand was when I did not find them in their usual haunts they were certain to be on the ground where any furze was burnt a short time before, but never on ordinary ground. When we have a good crop of haws then we have many finches." Their usual haunts in the Phœnix Park are the groves of ancient hawthorns which are such a feature of the place.

Mr. H. B. Murray, when living at Heywood near Clonmel, noticed Hawfinches there year after year from 1860 to 1868, usually but one or two birds. A male was frequently observed from January 25th to March 31st 1868, when he had assumed full summer-plumage. Most occurrences have taken place from November to March, but a Hawfinch was obtained near Naas, co. Kildare, about 20th July 1894.

Watters stated that he received from Meath an egg similar to Continental specimens of this bird's eggs. His collection has perished, and there is nothing to show that the Hawfinch has bred in Ireland.

THE GOLDFINCH. *Carduelis elegans*, Stephens.

Resident, widely distributed. Breeds in every county, but is rare where bird-catching is rife. Migrates locally in winter.

The Goldfinch, instead of being "rare and local," is a well-known bird in every part of Ireland from which bird-catchers have not driven it, though they have done this for miles round our larger towns, and even in many country districts the species has sensibly diminished. But throughout the island, and especially in the poorer and wilder counties, the Goldfinch is still common, though scarcely anywhere numerous. Less attached to wooded districts than the Chaffinch, this bird is found at home on open lands full of weeds, around the base of mountains, and near the coasts. This is so in the extreme south as well as in the far north, Gold-finches being observed in numbers through the bare country near Skull in West Cork, where there are no bushes larger than willows and furze; also about Valentia, and along the south coast of Wexford, this bird is common. In West Donegal, between Glenties and Dawros Head, it is perhaps the commonest finch. Trees are almost absent there, and it nests instead in gooseberry bushes and elsewhere in gardens, and in elder and hawthorn hedges. On Aranmore Island it is observed throughout the year and breeds, as well as in the adjacent districts towards Dunglow, which is so deficient in finches. At Bunbeg I saw a nest in the only apple-trees the place contained, and in which several pairs were said to have bred in the same season., Though common in park of Roscommon, Galway and Mayo, it is only a winter-visitor to Achill and Belmullet, as it is to Rathlin Island, though it formerly bred there. In Tipperary, Carlow, and Queen's County it is frequent.

In winter Goldfinches often leave their breeding haunts and are not seen for months, but at that season they are met with in flocks, and sometimes in company with Chaffinches or Lesser Redpolls. I saw about a hundred together on 4th May 1855, and in many parts of Ireland, e.g. Western Donegal, large flocks have been met with, but more usually small parties occur. Mr. Moffat observed great numbers roosting one winter in an evergreen oak in co. Wexford.

The reports of Goldfinches from lighthouses do not seem to prove a transmarine migration, but rather betoken irregular local movements round Ireland. They come chiefly from land-stations, or from islands in the west, the Kerry Isles, the Islands of Arran in Galway, and especially from Aranmore in Donegal, where Goldfinches breed. None are reported from the Wexford light-ships, nor from the Tuskar, which lie in the chief cross-Channel route of other small birds (Migration Reports).

Our Goldfinches breed in May and June, very exceptionally in April, but not unfrequently in July, when probably there is a second brood. Young have been taken from the nest on 6th September. Around Cappagh I have found the nest in the following trees: Apple, wild plum, hawthorn, horse-chestnut, laburnum, beech, evergreen oak, *Biota cinensis*, cypress, *Pinus insignis*, spruce and Scotch fir, larch, also in a furze-bush, and in a rose-tree nailed to the house, as well as in ivy on a wall. Eight nests were found in 1884 in one grove of firs on the hill called the Giant's Rock where Crossbills, Siskins, and Lesser Redpolls breed. Sheep's wool is often interwoven with the roots, stems, and tufts of fine grey lichen, which form the outside, but the interior is lined with soft vegetable down. Moss is not commonly used. Mrs. Delap saw Goldfinches in Donegal take a daisy-chain left by children and weave it into their nest with the flowers outwards. Four or five eggs are usual, but I have several times seen six in a nest.

The song is uttered from March to June, but Kinahan has heard it in August and September. I have heard it executed on the 20th October.

I am informed that Mr. Horan, of the Abbey, Louth, had a Goldfinch which lived to the age of seventeen years.

White and partially white specimens of this bird have been obtained.

THE SISKIN. *Carduelis spinus*, (Linnæus.)

Resident, breeding locally in our four provinces. Common in flocks in winter.

Thompson in his first volume described the Siskin as an occasional winter-visitant, and in his appendix as an annual visitant to some districts. It is probable that since his time it may have increased as a breeding species, as so many woodland birds have done in Ireland owing to the growth of plantations. Kinahan had met with it on the Little Brusna, North Tipperary, in June 1848, and at Ranelagh, co. Dublin, in May of that year. He observed a female in co. Wicklow, in July 1852, and Dr. Burkitt, of Waterford, wrote: "Several Siskins visited us in the summer of 1852." In 1856 I observed Siskins in the breeding season, and in April 1857 I found a nest in a Scotch fir at Cappagh. In April and May of that year the woods here were continually ringing with the cries and songs of Siskins. I cannot believe that the bird had never before bred in Ireland. Its small size and habit of frequenting the tops of lofty fir-trees in the breeding season render it liable to be overlooked. I have notes of Siskins in spring and summer, and of their nests or broods during a long series of years. Since 1857 they are more numerous in some seasons than in others, and several pairs usually breed within the radius of four hundred yards from my house. Siskins have been seen in the breeding season in Kerry and Cork. In Wexford Mr. Moffat finds they breed regularly, and thinks there are more in summer than in winter. The wooded districts of Wicklow are the best known breeding-haunts of the Siskin. In May 1871 a brood was reared on a larch bough at Fassaroe (Barrington, in *Zool.*, s.s. p. 3915 [1874]). The observations of Rev. A. Ellison at Coolattin in the south of the county have added largely to our knowledge of this bird's breeding habits, and Mr. Johnston has found it breeding regularly in the Powers-court woods. Young broods have also been seen at Killakee and Dundrum, co. Dublin. Siskins have been observed in the breeding season in Carlow and Kildare, and a nest is reported from Loath. They have also been seen in summer on Lough Corrib in Galway; and during a visit to the counties of Sligo and Roscommon in May and June 1896, when I was accompanied by Mr. Warren and Rev. A. Ellison, we found these birds common on lofty trees in the wooded demesnes of Hazlewood, Markree and Rockingham. Some were singing, and there can be no doubt that they were breeding there. In winter the Siskin breeds regularly in the counties of Fermanagh, Armagh, Down, Antrim, Tyrone and Donegal, and has been found in the breeding season in Monaghan and Londonderry. In Armagh and Down it is taken from the nest for a cage-bird, and has long been known to breed in those counties. In winter flocks of Siskins, often accompanied by Lesser Redpolls and sometimes by Goldfinches and Tits, frequent plantations of alders and birch -in all parts of the country, and have even occurred in Achill. Both in summer and winter, however, this species is variable in numbers, being scarce one year where it was numerous the previous one. In October and

November 1887 specimens were sent to Mr. Barrington from isolated light-stations; Rockabill, off Dublin, round the south coasts to the Kerry Islands and Slyne Head in West Galway. The species has similarly occurred in other seasons, but irregularly, showing that the immigration is fluctuating.

The Siskin, as it flies over, may be easily recognized by its shrill, clear cry, which it habitually utters on the wing, and which distinguishes it from any other bird. In the breeding-time the Siskin is the most joyous of birds, seeming to bound through the air with a cry of delight, and to proclaim its feelings by every note and movement. The song is not loud, but it is exceedingly sweet, voluble, and varied. The bird usually utters it in

April, Mayor June, on the topmost spray of some tall tree, but he frequently takes a circuit on the wing, pouring out his strain with passionate delight. He will repeat his song several times before alighting, always changing his direction of flight when he recommences to sing. Mr. Moffat has observed that after alighting the bird will sometimes continue the song while floundering about among the branches, coming gradually lower till at last he drops in a sort of ecstasy to the lowest branch, and the song terminates with a long-drawn creaking note. When a party of Siskins suddenly take flight they utter a note like "tut tut tut."

In winter the favourite food is the seeds of birch and alder, and I have seen Siskins extracting seeds from the cones of the Douglas fir, which hang down, and the birds may frequently be seen turning heads down, like Tits. Ellison believes that they feed their young largely on aphides which abound on the leaves of the alder, where he has seen the old birds searching for food. They are unsuspecting, and permit one to watch them closely when feeding.

The Siskin is the earliest of our Finches to breed, laying its first clutch in Waterford and Wicklow early in April. A young brood that had quitted the nest has been seen on the 29th April. A second clutch is laid in June.

In spring this bird frequents the upper parts of tall conifers, usually Scotch and silver firs in which it breeds. We have several tall groups of the latter about the demesne in which Siskins annually breed, sometimes towards the top of the tree and always far out on the branch, sometimes twelve feet from the trunk. The nest is placed on the central stem of the branch which helps to conceal the tiny object from below, and a fan of the branch often over shadows it from above, so that its lofty position does not expose it to marauding birds. Mr. Ellison has found a nest only twelve feet from the ground, and another built against the central stem of a spruce near the top, but these were exceptional cases, forty to fifty feet being the more usual elevation.

All the nests which my informants or I have seen were in coniferous trees—Douglas, spruce, silver or Scotch firs or larch. Mr. Barrington has found one in a deodar.

The accounts of Siskins breeding in furze or juniper bushes near the ground are quite foreign to our experience, and are more in keeping with the habits of the Lesser Redpoll. There is a nest from Wicklow in one of the life cases at the Natural History Museum, South Kensington.

The nest measures from an inch and three-quarters to two inches wide internally, and an inch and a quarter deep. It is not so compact as that of the Goldfinch, the light being sometimes visible through it. A number of small dead twigs of spruce-fir are usually incorporated with its base and sides, in one case making it look from beneath like a miniature Rook's nest. These twigs often have tufts of grey lichens attached to them. The body of the nest is of green moss with a few dry bents, and the edge bound round with sheep's wool or horsehair. So much of the latter is sometimes used as to make the edge quite black, the long hairs being carried round and round, skilfully interwoven. The interior is of the finest fibrous roots, sometimes mixed with a few soft feathers, rabbit's wool, cow's hair, or thistle down; but the presence of these materials is not constant like that of the green moss and fibrous roots.

The eggs, four or five in number, are of a clear pale blue, not so deep a blue as those of the Lesser Redpoll, but with more gloss. The pale red spots and streaks are the most numerous; the outer spots are of the deepest red-brown, approaching black.

The parent Siskin when feeding her young alights at a little distance from the nest and then creeps to it along the branches. When the brood leave the nest, the old birds may be seen feeding them on the upper branches of elms, which are then covered with seeds in a green state, and these are greedily eaten. Young Siskins are very noisy, sometimes taking flight and performing a circuit on the wing in a close body, while they call vociferously all the time.

SISKIN'S NEST IN A SILVER FIR

Photographed by C. Kearton.

THE SERIN.

Serinus hortulanus, K. L. Koch.

Has once occurred in January.

In the *Zoologist* for 1893, p. 108, Mr. E. Williams announced that on the 2nd of the previous January, a local bird-catcher had brought him a Serin in adult winter-plumage, which, as he informed me, was taken south of Dublin. The specimen is now in the Dublin Museum of Science and Art.

THE HOUSE-SPARROW. *Passer domesticus*, (Linnaeus.)

Resident and numerous, breeding in every county, but local in some districts.

This ubiquitous species is spread throughout Ireland to the remotest coasts, and delights in the "congested districts," where the numerous thatched cabins afford it comfortable homes; it also breeds on all the inhabited islands of the north and west. I have found it abundant on the exposed seaboard near Dunglow and in Western Mayo wherever there are cottages, also on the Aran Islands, while on Torv Island and Rathlin it is also resident. Mr. Witherby met with a large colony of Sparrows nesting in the ivy-covered cliff by the harbour on Inishturk, off Mayo, which storm-swept and barren island contains about a score of houses. The numbers of this bird vary greatly in country parts of Ireland. In some counties, as Fermanagh, Armagh and Antrim, it is abundant. In others, as Waterford, it is absent from many if not from the majority of farmsteads, but though local with us I find it increasing and spreading. In some exposed parts of Ireland, as in co. Tyrone, Sparrows frequently forsake houses in the open country during winter (Irvine). Cox observed them to disappear from Dublin after the young were grown and to return about the end of October or beginning of November, fresh from their harvesting trip (*Zool.*, 1879, p. 453).

We do not, however, in Ireland, see the huge flocks far from towns, that may be met with in the wheat-growing counties of England. Sparrows have often occurred, singly or in flocks, at light ships and rock-stations all round Ireland. Their visits take place most frequently in March, none in January, February or August, showing that the bird wanders at times more than one might expect from such a stay-at-home creature, though these flittings have not the character of migration.

The Rev. C. Irvine has seen Sparrows "dusting" themselves in the freshly fallen snow.

Near the coast, where trees were scarce, three nests of this bird, containing eggs, have been found in the same tree with Rooks nests.

Mr. Norman relates that he saw a Sparrow fluttering in the air two or three feet from the ground and pounce down time after time on the shrewmouse, which made a squeaking noise, and was found with blood on its head, quite incapacitated by the Sparrow's blows.

THE TREE-SPARROW. *Passer montanus*, (Linnaeus.)

Resident in one district north of Dublin Bay since 1862, and increasing there.

The first Irish specimen was exhibited by Montgomery before the Dublin Natural History Society in 1852. Since then the species has evidently increased and spread over that part of the county between Dublin Bay and the Malahide estuary. Dr. Patten, writing in October 1898, remarked: "The Tree-Sparrow seems to be extending its range in the co. Dublin. This year I noticed double the number about Baldoyle, and I obtained a specimen from Crumlin (eight miles from Baldoyle), caught by a bird catcher.' The latter place is on the south-west side of Dublin.

A male shot at Sandymount was presented to the Museum in March 1865, and Mr. H. Blake-Knox gave Dalkey as a locality for this bird as well as Baldoyle (*Zool.*, 1870, p. 2018). Both these localities are on the south side of the bay.

In December 1890 a specimen was obtained near Bray on the borders of Dublin and Wicklow.

On the 22nd October 1896 a Tree-Sparrow, now in Mr. Barrington's collection, was caught exhausted on the Tuskar rock, off Wexford, in the route of migrating birds.

I have notices of this bird from the counties of Wexford and Fermanagh, which I have no wish to discredit, but the corroboration of specimens is wanting, and until such are obtained those localities cannot be admitted.

Mr. H. M. Wallis stated that he identified a pair which frequented the roof of a cabin on Aranmore Island. co. Donegal (*Zool.*, 1886, p. 489). The species cannot have established itself there, for in 1896, when I visited Aranmore with Rev. A. Ellison, we passed an hour inspecting the Sparrows about the cabins on the island, without meeting with a Tree-Sparrow.

THE CHAFFINCH.

Fringilla œlebs, Linnæus.

Resident. The commonest land-bird throughout Ireland. A winter-visitor to the treeless western border. A large immigration from Great Britain takes place in winter.

The Chaffinch is conspicuous by its abundance in all parts of Ireland that are not quite destitute of trees, and especially so in the inland parts of Kerry, Connemara and Donegal, where woodland-birds are few. It now breeds regularly in Achill, though only a winter-visitor there till 1875, as it still is to the Mullet in Mayo, the Dunglow district in Donegal and Rathlin Island. In the latter and in similar coast and moorland tracts its absence in summer is striking, but when one reaches the first attempt at trees it is usually met with.

The general annual immigration from beyond the Channel is at its height in October, but continues in November and is renewed in severe frosts even into February. It is most observable on our east coast, especially at Wexford stations, but is continued west-wards along the coast of Cork, in the west of which county there is a decided increase in the Hocks of Chaffinches during the winter. The October arrivals frequently extend to the Tearaght off Kerry, our most western rock, but the extreme points of Connaught are more usually visited in severe winter weather. The spring exodus takes place in March and is continued in April, the birds being then seen flying from Ireland as they are seen to fly towards our shores in autumn.

Flocks of females have been often noticed in co. Dublin, in northern counties, and once, at least, on the Tearaght, but in January 1877 Mr. Palmer, then at Lucan, co. Dublin, met with thirty or forty males to one female during several days, and Mr. Hart during one winter observed the same thing in Donegal (*Zool.*, 1891, p. 336). In co. Waterford I have failed to find these exclusive Hocks, though the species is abundant it all seasons.

In Kinahan's table (*Proc. D.N.H. Soc.*, 1853, pp. 100, 101), August and November appear as the only months when this bird's song is hushed. It sings occasionally in soft mornings during winter, but does not usually begin regularly until February, and the full song is not uttered at first. It has been heard perseveringly repeated on the 3rd March, while snow was falling lightly, and has also been uttered on the wing.

In severe frosts flocks may be seen pecking among the droppings in the streets of our cities.

Others in Ireland besides myself have noticed the nest of the Chaffinch in close proximity to that of the Mistle-Thrush, which bears out observations of the same fact in England and France (Dresser). A white Chaffinch has been preserved by Messrs. Williams & Son.

THE BRAMBLING. *Fringilla montifringilla*. Linnæus.

Winter-visitor In varying numbers to all quarters of Ireland, but rare In the west generally.

The Brambling visits Ireland in the same irregular manner as it does Great Britain. In some winters it is even frequent, and almost every winter we have some. This applies to so many counties in Munster, Leinster and Ulster that the bird must be considered an uncertain and wide-spread rather than a rare and local visitor. In special seasons very large flocks have occurred as in co. Armagh where thousands remained for about a week at Elm Park in March 1844 (Thompson).

Cork has numerous records from so many districts as to compare favourably with most other counties and the species frequents more or less regularly the maritime counties up the east coast to Londonderry as well as Tipperary. Queen's County, Carlow, Fermanagh and Tyrone. From other midland counties my records of it are decidedly scanty, but it is in Western Munster and Connaught generally that the Brambling would appear to be rarest. This paucity of notices from that part of Ireland is not entirely due to absence of observers for Mr. Warren hap only once met with the bird near Ballina; it visits Achill, however in hard winters (Sheridan) and Mr. E. Williams saw many Bramblings there in October 1898.

The idea that it occurs chiefly in the north and middle of Ireland should therefore be modified. Of the ten specimens that Mr. Barrington has got from light-stations five are from the Wexford coast where most other migrants arrive. Two are from Cork, and two from isles off Western Kerry. The remaining one only (from Donegal) comes from a station north of Wexford. Thus the statistics of migration, coupled with inland records, show that Bramblings arrive on the eastern side of Ireland, spread inland and along our south coast, but that few reach the western counties.

I have no record of this bird earlier than September, nor later in spring than April; October being the more usual month for arrival, and March for departure. In 1890, however, Mr. Williams observed Bramblings in co. Dublin until the end of April, when they had assumed the breeding-plumage, some specimens having quite black heads.

In severe winters these birds sometimes appear in unexpected numbers and in unwonted localities, but their regular visits are apt to be overlooked, owing to their shyness and general resemblance to Chaffinches. Thus it was not until my coachman had caught one that I became aware of their visits to Cappagh, where I afterwards noticed their appearance during a series of years.

Wooded localities are usually preferred. Bramblings roost with Chaffinches among our laurels, and feed with them and with Yellowhammers in the daytime. In Wicklow and Carlow, however, they are said to frequent cultivated areas among the mountains.

THE LINNET. *Linota cannabina*, (Linnæus.)

Resident and common in the open districts, breeding in every county.

The Linnet is one of the most common birds wherever furze abounds, especially in the coast districts. It breeds on islands like Lambay, Rathlin, Aranmore and Tory Island; but it is also common in the treeless tracts of the central plain, on the lower slopes of the mountains, and through almost every part of Ireland that is either unreclaimed or that has run wild. In the cultivated and planted districts, on the other hand, it is usually scarce or absent; still Mr. Warren thinks that it is more numerous in Cork than in Mayo and Sligo. No species is more given to flocking, and the migration-reports yield notices of it all round the Irish coasts and at all times of the year. Even in the spring and summer months Linnets sometimes visit the light-stations in flocks; thus at Rathlin Island, on the 12th May 1884, there were flocks going west all day, an instance of the many irregular and unaccountable movements of this species. Still the months of March, April, September, October, November and December are those in which alone the occurrences are numerous, chiefly October. The Wexford coasts, too, are richest in records, but Slyne Head, the Arran Islands, and other western stations (so unfrequented by other migrants) are visited by Linnets very frequently. At two of our most western islands; Rathlin O'Birne and Eagle Island, Linnets have repeatedly been observed flying westwards, while at Tory Island they have been seen arriving from the west-the direction of the open ocean and then making for land. The great majority observed at isolated stations are apparently flying towards land both in spring and autumn. The great movements, however, at those seasons show that there is a large immigration, and the increase of Linnets in flocks is observed in many parts of Ireland-for instance, in West Cork.

The chanting together of Linnets in flocks takes place from January until March; then the proper song begins, which usually ceases in July, but has been heard in August.

Furze-bushes are the almost invariable nesting sites, the eggs being laid in May, June and July.

THE MEALY REDPOLL. *Linota linaria*, (Linnæus.)

Very rare winter-visitor, chiefly taken on the western islands.

Following the arrangement of Mr. Howard Saunders, the Mealy Redpolls obtained in Ireland are here placed under the head of *L. linaria*, though several have been referred to *L. rostrata*, whatever the specific value of the latter may ultimately prove to be.

The first specimen recorded in Ireland was shot at Levinstown, co. Kildare, on the 9th February 1876 while feeding on alder trees with Lesser Redpolls (Field, 19th February 1876). It was identified by Mr. Harting. Seven specimens have been received by Mr. Barrington from the Tearaght, off Kerry, in the autumns of four years: the first on the 19th September 1889, the second on the 14th September 1890, three on the 25th and 26th September 1892, and a sixth on the 18th October of the same year. The seventh was obtained on the 15th November 1893. Two of these, submitted to pr. R. B. Sharpe, were considered by him to be *L. rostrata*, a Greenland form. In February 1893 Mrs. Harvey obtained two out of a flock of eight Mealy Redpolls at Glendarary, Achill. One of these, in the Dublin Museum, was found by Dr. Sharpe to be the typical *L. linaria*. In October 1897 Mr. Sheridan obtained a beautiful specimen in Achill, which again was referred by Dr. Sharpe to *L. rostrata*. Another was obtained in Achill in October 1898, and set up by Mr. E. Williams who was staying there, and who saw Mealy Redpolls every day from the 14th to the 21st, usually "in little flocks of about half-a-dozen."

The only example recorded from Ulster is one sent to Mr. Barrington, obtained on the island of Inishtrahull the first week in January 1898.

From the above it appears that (with the exception of the Kildare bird) all our Irish specimens of the Mealy Redpoll were obtained on the islands of Kerry, Mayo and Donegal, on that side of Ireland where the Greenland, Falcon and Snowy Owl have chiefly occurred, and which is most frequented by the Bernacle Goose, though comparatively deficient in Passerine migrants.

THE LESSER REDPOLL. *Linota rufescens*, (Vieillot.)

Resident and common, widely distributed.

The Lesser Redpoll is probably an increasing species, being now known to nest in every county except Kerry, but as it does so in West and North Cork, the gap will be, doubtless, filled up. It breeds commonly in Waterford, as it does in most counties, and in none more numerous than those of Ulster, including Western Donegal, where it nests even on Aranmore Island. It has been found breeding of late years in Achill, and is not uncommon in Connemara. The Rev. Allan Ellison describes it as more-numerous in summer than in winter in Wicklow and Down, and Watters noticed the same thing in co. Dublin.

Mr. Barrington has not a single specimen from any light-station, and there are but three records of "Redpolls," which may be of this species, in the Migration Reports. Its migration across our seas, therefore, wants proof.

Few seem to know how common this little bird is, but, though it is not so easily recognized by sight, its twittering churr, as it flies overhead, will indicate its presence.

Flocks of a hundred or more may sometimes be seen in the open country in winter, but smaller parties, which are found still together in April, are more frequent. They are often engaged feeding on the seeds among the branches of birch and alder with Siskins, Tits, and their companions. On the North Bull bank in Dublin Bay large flocks feed on wart-wort, and other barren-laud plants, whose seeds are eaten by the Snow Bunting (Mr. H. Blake Knox).

With us the Lesser Redpoll is a late breeder, the latter part of May or the month of June being the usual time for the eggs. It builds in a great variety of situations, but not on bare mountains nor along coast-cliffs like the Twits. It is more a bird of wooded and cultivated districts, though it often breeds near the sea, as in the Mullaghmore plantations among sandhills in Sligo, and about Killybegs in Donegal, where I have seen it nesting in a willow by the roadside. It sometimes builds forty feet from the ground in a lofty ash, and sometimes in a furze or currant-bush, honeysuckle, or even briars. It has been known to breed in cypress, Scotch fir, larch, alder, apple, lime, hawthorn, laurel or other evergreens, or on a pollard stump. I have found a nest built against the trunk of a fir, and another on an outer spray of a hawthorn in a position suitable for a Goldfinch.

I have preserved a nest built right in the midst of a whorl of shoots which grew on the top of a young Scotch fir that had lost its leader. Another nest is built of green moss, entwined with a few bents, and is lined with fowls' feathers, the tips of which stand up high above the brim all round, curving inwards so as to cover the hatching bird. When in an apple-tree, the base is composed of the same grey lichens which grow on the branches and make the little structure look like an excrescence of the tree. I have watched a Redpoll lining her nest. She pressed down the forepart of her breast and worked herself round, her tail sticking up and twirling like a shuttlecock.

THE TWITE. *Linota flavirostris*. (Linnaeus.)

Resident, locally common, breeding in all the counties except those of the central plain.

Wherever mountains and elevated rocky coasts occur, as they do so largely in Ireland, the Twite breeds in greater or lesser numbers, and this applies to all the provinces. It is a common and characteristic bird of such wild and exposed parts of our island, and the wilder these are the more the Twite seems to love them, especially when they overlook the sea. Even the precipitous islands of Kerry, Inishturk and the lofty cliffs of Achill and

Rathlin are not too exposed for breeding resorts. The nature of its haunts renders the Twite little known, though it is the commonest of the Linnets in its favourite districts, as Mr. Warren remarks in connection with the neighbourhood of Killala Bay. This bird is not reported to me from the flat midland counties, even though they contain great bogs, such as Kildare, Westmeath, Longford.

Twites have been observed at the Tuskar and the Copeland Islands, crossing the sea towards Ireland in October and November; but such records are not numerous in the Migration Reports. Like the Linnet, this bird rarely strikes the lighthouses. In winter, flocks visit the more distant islands, the Tearaght, Eagle Island and Inishtrahull, and remain there some time. Mr. Teesdale, when off the shore of Connemara, near Carna, on the 31st October, saw at dusk two large flocks of Twites flying about five feet above the sea towards the outlying islands, where they were probably going to roost. During winter this species may be found in flocks on low and sandy parts of the coast, and visits some lowland districts which are open or moory. In the west of Cork, for instance, large flocks are observed at that season. From the enclosed and timbered parts the Twite is usually absent at all seasons, but in North Donegal Mr. Hart has noticed flocks of fifty or so coming to roost in his plantations. He remarks that this bird is not unfrequent in most of those parts of Donegal where there is an upland of peat.

On the heath-clad parts of the hills near Cappagh, I have listened to this bird in May, while, on a low bush, it uttered its song in passages or exclamations, the longest of which seemed like "Lazy Jenny."

Twites breed numerous on our elevated coasts, much more so than on the inland mountains. I have often obtained complete clutches the first week in May, but not earlier. Thenceforward through June these birds breed in increasing numbers, and I have seen eggs in July and August. A typical breeding-place is the brow of a hill or headland overlooking the sea. In such a situation I have seen the nest slightly sheltered by a projecting point of rock, or in a low furze-bush shaped by the blast to the contour of the storm-swept hill; but taller furze is sometimes used, and at other times the nest is on the ground among heather. One was found in co. Down under the edge of a tuft of rushes, with no heather near it, in a large turf bog, many miles from any hill. The top of this nest was just level with the ground. Thompson states that Twites breed on the low, heathy tracts adjacent to and little above the surface of Lough Neagh. Mr. H. Leybourne Popham informed me that he found two Twite's nests in heather on islands in a moorland lake in Connemara. The nest is variously constructed of dry grass-stems, root-fibres, and fine stems of heather. An occasional feather is sometimes worked into it, but the lining is usually of white or red hair, sometimes mixed with rabbit's fur. It is neatly finished inside, the internal diameter being two inches or a little less, and the depth about an inch and a quarter. I have seen a great many nests, and have noticed that five or six were the usual number of eggs; four is exceptional; while I have obtained two clutches of seven. The ground is of a distinctly blue tint, distinguishing them from Linnet's eggs, and markings of the darkest red-brown, usually round the large end, are more common on Twite's eggs than on those of the Linnet. Crooked streaks, often approaching the type of those on eggs of the Buntings, are highly characteristic.

Three white fledgeling Twites were caught in co, Antrim in the summer of 1887 (*Zool.*, 1891, p. 317).

THE BULLFINCH. *Pyrrhula europaea*, Vieillot.

Resident, common except in bare districts, Breeds in every county,

This is another of those woodland birds which is gaining ground in Ireland. Thompson described it as rather scarce, and stated that in many of the artificially wooded districts it was not found; while Dr. Burkitt was not acquainted with it round Waterford until about 1840, although from that time up to 1855 he found that it had become plentiful in all directions. Within my memory it has decidedly increased here, not only abounding in the young larch and fir plantations, but being met with along the country hedges, far from woods. In West Cork and in Armagh its increase has also been noticed, and in fact one has now-a-days to inquire where it is not common. This I am told is the case about Londonderry, in Western Donegal, and in Mr. Warren's district near Ballina. Naturally the Bullfinch is absent from the coasts and islands, and from the treeless tracts of Western Connaught. It is, however common as far west as the basins of Longhs Corrib and Mask, and is occasionally seen at Ballynahinch in Connemara.

In the Migration Reports there are some twelve notices of the Bullfinch from isolated stations on various parts of the coast, but none of these have ever been confirmed by the production of a specimen.

Mr. Warren noticed, in the autumn and winter of 1880, an unusual influx of Bullfinches into his district both on the Mayo and Sligo sides of the Moy.

I have seen thirty or more feeding at the same time on the berries of a mountain-ash, others eating daisies on a pasture, and Mr. Blake Knox has watched Bullfinches feeding on blackberries.

The song has been heard in December by Mr. Palmer.

The Bullfinch is a late breeder here, the eggs being laid in May and June, and I have a set taken in July. The number of eggs is four or five, and I have never known six in Ireland. In one instance I found the nest lined with white cow's hair; a very exceptional case, for root-fibres usually form the interior of the cup.

THE CROSSBILL. *Loxia curvirostra*, Linnæus.

Resident, but local. A few breed in the conifer woods of each province.

Thompson quotes several occasions in the last century, and early in the present one, when Ireland was visited by flocks of Crossbills, then an unusual sight. Professor Newton: remarks, in connection with their appearance here in 1821, that many also overran Great Britain in that year. Up to Thompson's time the Crossbill had been regarded as an autumn and winter-visitor, with a few exceptions. He mentions reports that it had bred in Wicklow, Meath and Down, and in 1838-9 a small flock was observed to remain through two breeding-seasons at Ballybrado in South Tipperary, where they produced young. It was not, however, until 1867 that in co. Kildare nests were found, which contained young on the 10th of March (*Zool.*, 1868, p. 1133). In 1868, according to Sir Victor Brooke, the Crossbill bred at Colebrook, co. Fermanagh, and it continues to be a resident breeding species in demesnes in that county, I have heard of it in King's County nearly every year since 1881; also in Westmeath for twelve years commencing 1883.

In 1887 Crossbills became unusually numerous in the north-west of England, and in June and July 1888 a great movement of these birds was recorded from Spain, Portugal, France, Heligoland, the Humber district, and the Inner Hebrides. They increased suddenly in Ireland in 1888, when Mr. Crosbie Smith knew of thirteen nests near Monkstown, Cork. In that year they were observed close to my house, and have never been long absent from Cappagh since. In 1889, 1890, 1891 they were reported from 15, 16, and 17 counties respectively, breeding in several. In 1894 they were announced from 18 counties, and have now established themselves in varying numbers in most of the large plantations of conifers in Ireland. They often fluctuate from year to year, frequenting or forsaking a locality according to the abundance or abundance of cones on the trees.

A Crossbill was obtained as far west as Achill in February 1894, and Clare is the only county from which I find no notice of this bird. A light-keeper on the Tuskar observed and caught a few about the middle of the century. Mr. Barrington received a young bird caught on the Conningbeg light-ship, 4th September 1898, the only example sent him during fifteen years.

I will give the results of my observations of this now familiar bird at Cappagh since its settlement in 1888. I have been much aided by John Power and others here.

The Crossbill is more easily recognized in flight than almost any small bird, for it habitually announces itself by its loud rattling call-note, "jip, jip," which draws one's attention when the bird is but a speck against the sky, and its flight is usually above the level of the tree-tops. The measured flight of a flock, as they perform a circuit on the wing, all calling together, is a striking sight. The deliberate series of wing-strokes, interrupted by pauses, is characteristic of the Crossbill's manner of flight, though I have seen a Hock perform antics in the air, like Rooks when they tumble. When perched on a tree-top the Crossbill holds itself erect, its large head separated from the body by a distinct neck, and its long crossed mandibles looking as if it held some-thing in its bill. It consorts in flocks and parties with its own species only. The call-note is modified into "yep, yep," or "yup, yup," when uttered by the hatching female from the nest, a trait of this fearless bird; and it is then probably a call for food. The song may be heard in February, even when snow- is on the ground, but more usually in March and April, occasionally by moonlight, but ordinarily in the morning. It is delivered as the bird sits on the leader of a fir-tree, but sometimes while he takes a circuit on the wing before he alights. It is marked by the repetition of the leading notes "chit, chit," delivered like a trill, followed by a loud creaking note, "chwee, chwee," which the Crossbill repeats with special gusto. The saw-sharpening note, less loud than that of the Great Tit, is often uttered, but individual birds vary as to the note they dwell on most. Then there are some low, sweet notes, not so often heard, but I should never call a Crossbill's song "low warbling." I have heard one utter a singular twirling sound like a tightened chord vibrating against something that chafed it, suggesting the syllables "whirl gig." This probably was merely a variation of the singular song, which we must allow is usually harsh. I have heard a young brood calling after their parents for food: "chit-oo, chit-oo, chit, chit." I do not know that there is any special warning-note, the "jip, jip" being uttered excitedly when intruders are at the nest.

The absence of fear of man is remarkable in this species, but let a Sparrow-Hawk appear and they are immediately on the wing performing lofty flights, with angry call-notes. A flock will continue to feed on trees while people lire walking and talking and dogs are barking beneath, and sometimes even when the spectators

are trying to scare them with shouts and stones. When I touched a hatching female with a stick she bit the stick. I then raised her with it, to see if she had eggs, but she held on to the nest with both feet, and when the stick slipped away she sank back into it. Less tame individuals will sit on the same tree, or the next, while the nest is being inspected. A nestling, which we caged, when taken in the hand did not struggle, but tried to bite. Its parents came to feed it at the cage for nearly a fortnight. Crossbills will habitually alight on the eave-shoots and drink from them, and a brood, recently flown, perched on the balcony railings and entered the door at the Giant's Rock house to drink water from a tub. In spring and summer mornings we see them fly down from the woods to the stream. They avoid the lakes, but seek running water to drink.

The seeds of conifer's, their natural food, are now their staple diet; but before the larch and fir were largely planted in Ireland these birds resorted to the then numerous orchards to feed on the apple-pips. This was my father's experience in or about 1798, when the presence of Crossbills was often betrayed by the sound of splitting and falling apples. Of this we never hear now-a-days. They will eat beech-nuts, immature ivy-berries, and buds of ash, beech and larch. I have watched a Crossbill that had young feed on the larch branches when the buds were sprouting, and then fly to the nest with the gathered food. A flock has been seen picking on the ground under a willow covered with catkins, evidently feeding on the debris of the blossoms. This is unusual, as they scarcely ever perch on the ground, except when drinking or gathering materials for their nests. It is a pretty sight to see a bird swaying, head downwards, at the end of a branch, bite off a cone, fly to a firmer perch, hold it pressed there with one foot and pick it to pieces. Mr. Moffat observes that it commences at the base of each cone, that each scale of a larch-cone afterwards exhibits two longitudinal gashes, but that the scales of fir-cones are completely loosened. When not feeding, this bird sometimes uses its beak in climbing, like a Parrot.

Our Crossbills lay in February or March, sometimes in April and in 1899 young broods had left their nests before the end of March; and the first late brood I have heard of was in July 1899. The favourite nesting-sites are in old Scotch firs on hills. One nest was on the summit of a hill 566 feet high, but for the past ten years the chief haunt of these birds, near Cappagh, has been another hill-top, called the Giant's Rock, where a house stands surrounded by masses of fir and larch trees. Three and four nests have been built in the season near this house, and near the offices where animals are kept. A pair of birds once built in a larch, another in a spruce, but all the rest in Scotch firs. Usually the structure is placed near the top of the tree where the shoots form a little chamber for it, less frequently near the extremity of a large upturned branch. One nest on a steep, elevated slope was but fifteen feet up a small tree, but the height above the ground is generally twenty-five to forty feet. The foundation of larch or fir twigs is characteristic, being very much wider than the nest, which is of dried grass mixed with sheep's wool and sometimes with moss and roots. Occasionally there is a strip of inner fir-bark or a tuft of lichen, exceptionally a feather or two finer grasses form the lining, not usually hair. The diameter, exclusive of the projecting twigs, measures two-and-a-half inches internally, five inches externally. I have never found more than four eggs. (In 1866, out of four nests only two young birds were produced, all the remaining eggs proving infertile and forsaken, though not disturbed.) While the female was hatching, the male has been seen shuffling and flapping his wings with delight, flitting through the trees near the nest, or singing vile flying in a circuit. The hatching female may be seen to rise from her crouching position, wriggle and turn round in the nest: When the male comes to feed her she sometimes leaves her post immediately and joins him. One nest was being built on the 13th April; on the 20th the bird was sitting in it; while on the 11th May it contained young, which had left it on 18th May. These are at first covered with greyish-black down, and the enormous upper mandible overlaps the lower on both sides and does not cross it, but the twist in the mandibles is soon developed. The parents cannot carry away the droppings regularly, for the exterior of the nest is sometimes covered with them. Family parties after leaving their nests soon unite, forming flocks, and in June and July they wander to other parts of the country, while it is about this time of year that they usually settle in new localities.

The group which I presented to the Museum at South Kensington exhibits an instance of the male breeding in golden yellow plumage, and I know of two other such instances. In One case the yellow male was decidedly a most wary Crossbill; he was large and active, with long mandibles conspicuously crossed, leaving no doubt that he was an old bird.

The reds and greens in the Crossbill's plumage may be regarded as protective colouring, the former harmonizing with the russet-bark of the Scotch fir and the latter with the foliage.

The larger form, called the Parrot-Crossbill, was obtained in King's Co. in 1889 (More, in *Zool.*, 1889, p. 181), and in 1891-2 other specimens were procured in different parts of Ireland. Three infertile eggs taken here in 1896 were larger than eggs attributed to the Parrot-Crossbill. They measure from .96 to .92 in length, by .68 to .67. Mr. E. Williams records (*Zool.*, 1889, p. 266), under the sub-specific name of *Loxia rubrifasciata*, a specimen from Edenderry in which the tips of the wing-coverts were buff, forming two bars. It is now in the Dublin Museum.

THE TWO-BARRED CROSSBILL *Loxia bifasciata*, (C. L. Brehm.)

Extremely rare and accidental visitor.

The first known instance of this bird in the British Islands took place at Grenville, near Belfast, On the 11th January 1802, and was recorded by Templeton (Trans. Linn. Soc., vii. p. 309). A coloured representation of the specimen, which enabled Thompson to identify it, showed that it was olive and yellow, with dark streaks beneath, and, in addition to the two white wing-bars, the wing feathers generally were tipped with white.

In 1867, or earlier, Mr. H. Blake Knox received from Mr. Sheals, of Belfast, a bird said by the latter to have been killed at Templepatrick, co. Antrim. I have recently examined this specimen, which is in olive plumage with yellow rump, the two white wing-bars being very conspicuous, and the tertials and under tail-coverts also broadly tipped with white. It corresponds with descriptions of the female of this species in the standard works.*

On the 17th February 1895 Mr. Charles Langham shot an adult male in red plumage at Tempo Manor, co. Fermanagh, while it was singing on the top of an ash, and a small flock of Crossbills were flying over, calling at the time; Tempo being a breeding-resort of the common species. This example, which has been seen by Mr. Howard Saunders and Dr. Sharpe, is preserved at Tempo.

* Mr. Blake Knox states that, having received the above as a Common Crossbill, he boxed it up and did not recognize its species for several years. It is not to be confounded with a bird which he obtained in the co. Dublin, and which he described as a specimen of this species (*Zool.*, 1868, p. 1376). Without questioning his determination of the latter, I have abstained from enumerating it, as it perished in a conflagration of benzine, so that further information about it is unavailable

Subfamily EMBERIZINÆ.

THE CORN-BUNTING. *Emberiza miliaria*, Linnæus.

Resident. Generally common in coast districts, local elsewhere.

All round Ireland this bird may be commonly met with on the small holdings near the coasts where the fences abound in briars. In such districts it is conspicuous and commonly distributed, especially, for example, in the Dunglow neighbourhood in Donegal, so deficient in many land-birds. It also breeds on the Saltees, Lambay, the Copeland Islands, Rathlin, Tory Island, Aranmore and Achill, less commonly on the Arran Islands, and it is common enough in some inland districts which are open and full of small cultivated farms on the borders of the moorland, as in the Swineford Union, co. Mayo; but, as a rule, in inland counties it is decidedly scarce and local, frequently absent, and it avoids wooded places. From Leitrim and most of King's County, I have no record of it, and in Longford, Westmeath and Fermanagh it is rare, while it is said to be decreasing in several districts, as near Dingle in Kerry, west of Bandonin co. Cork, in King's and Queen's Counties and Roscommon. There is no proof that it migrates across channel, but individuals arrive occasionally on distant islands like Inishtrahull and remain some time, and there are bleak inland localities which it almost entirely leaves in winter, as observed by the Rev. C. Irvine in Tyrone. It becomes more numerous at the same season near Bantry, where the climate is mild (Newburgh). It forms flocks in places, but these do not wander like the flocks of many small birds, and they keep together until late in spring, when the birds sing in company. I have repeatedly in April seen such an assemblage, amounting once to fifty or sixty Buntings, on a hedge by a farmhouse in an upland locality near our Waterford coast. The vociferous chorus they uttered was remarkable. A group of these birds seated on a bush will take wing together, and after performing a circuit return to their perch.

McSkimmin stated that this bird sings occasionally at all seasons. I have repeatedly listened to it in November and December, and it may be heard with very little intermission from the beginning of February until the end of August. The female sometimes hatches near the foot of the bush where her mate utters his loud tittering notes every day the whole season. Near Dunglow the Rev. A. Ellison pointed out to me that Corn-Buntings commenced their song with notes similar to those of the Yellow-Bunting. Our Corn-Buntings rarely lay in May, usually in June and July, occasionally in August. Boer is the usual number of eggs, but three

are often sat upon, while five are uncommon. The boldness of the streaks and blotches that adorn them make these eggs conspicuous among those of other species.

THE YELLOW BUNTING. *Emberiza citrinella*, Linnæus.

Resident, very common and distributed all over Ireland, breeding regularly in every district.

This is one of our commonest and most wide-spread species, for it frequents those parts of the country that are wild and open, quite as much, if not more, than the rich, sheltered districts. It is equally common on the coast and inland, and is resident on the islands enumerated in the case of the Corn-Bunting, with the addition of others, e.g. Inishbofin and Inishturk. In some districts, as about Carraroe in Galway, its place is said to be taken by the Corn-Bunting (Palmer), but I have generally found both species together.

In severe winters Yellow Buntings assemble in flocks about farmsteads, but do not usually leave any part of the country, and although the Rev. C. Irvine remarked their absence from the open district about Omagh in the severe frost of 1878-9, he regarded this as exceptional. They rarely strike lighthouses, but have often been observed at island-stations and light-ships. These occurrences, however, take place round the whole coast, and at such various seasons as to suggest desultory straggling, rather than regular migration. They are, however, more frequent in November, while none are noticed in August.

The Yellow Bunting sings from the beginning of February until the end of August, and has been heard singing exceptionally in the dusk of the evening both in February and June (Irvine).

It lays with us in May and June, but eggs have been found in September, and I have seen a Yellow Hammer carrying building materials on the 14th August. The ordinary number of eggs is three or four, five being unusual, and sometimes only two are produced (Ellison).

A male performing his love-dance on a road is a quaint object. He flops about with wings spread out touching the ground, his crest and other feathers erect., and seems regardless of danger.

The Gull Bunting (*Emberiza cirrus*) has not been obtained in Ireland.

THE REED-BUNTING. *Emberiza schaniclus*, Linnæus.

Resident, and breeds in every county. Common on lakes, rivers, bogs and moors.

This is a truly characteristic bird of the wilds in Ireland. In June I have often found it to be the only land-bird on lonely lakes, where every islet then has its pair or two of Reed-Buntings. It is wide-spread in Connemara, through the peat-buried tracts of Western and Northern Mayo on the bogs and moors of Achill and Rathlin Islands, and also throughout Western Donegal. On the larger rivers, the Shannon and the Barrow, it is frequent. In the more cultivated counties it is to be met with about waters and marshes, though less commonly than in the districts before mentioned. It occurs in winter in small parties on mountains and other wild places far from water, sometimes coming about farmsteads with Yellow Hammers, or pecking among the droppings on roads. In March flocks of ten to twenty birds may be seen in places, e.g. near Carrick-on-Shannon. Where it is plentiful one winter it is sometimes absent the next, and vice versa. It has twice occurred in light-ships, and once on Inishtrahull; the rarity of these instances showing how indisposed it is to migrate by sea.

It seldom sings before March, and may be heard until the end of July. Kinahan has noticed the song at night. This I can only compare to the syllables "chit, chit, chatter"; the latter word quickly uttered, and the dong (if we must call it such) being repeated every few seconds. This is very different from the notes described as uttered in England.

I have more than once seen a Reed-Bunting with a large white butterfly in its bill.

On the islands of lakes I have found numberless nests of this species in tufts of coarse grass and rushes, in one of which latter the nest was placed high up. On Lough Mask there were two nests between boulders, of which the islands are largely composed. One of these was well under a boulder. Mr. H. Leybourne Popham found nests two or three feet from the ground in tall heather on some of the Connemara lakes, and Mr. Witherby found one several feet up a tree.

In Ireland the eggs are laid from the 20th of May, through June and sometimes in July. Four is the usual number, five are often laid, and sometimes only three. I have a clutch of a smoke-grey tint, devoid of purple, with slender streaks.

Birds that have young, especially the males, will spread them-selves out on the ground, like pen-wipers, to divert attention.

THE LAPLAND BUNTING. *Calcarius lapponicus*, (Linnæus.)

Has once occurred on the autumn migration.

A female Lapland Bunting and a Sky-Lark were picked up dead at the Fastnet lighthouse on the 16th October 1887, and the former is now in Mr. Barrington's collection. The night of the 15th October had been hazy, and several Sky-Larks and Starlings had struck the lantern. Among them this rare wanderer met with its death (*Zool.*, 1889, p. 76; *Migration Report.s*, 1887, p. 32). The Fastnet is a small rock seven miles south of the Cork coast, near Cape Clear and many interesting birds have reached it and been recorded by Mr. Barrington in the Migration Reports.

For Ortolan Bunting, *see* Appendix.

THE SNOW-BUNTING. *Plectrophenax nivalis*, (Linnæus.)

Regular winter visitor to maritime counties in the northern part of Ireland; more of a straggler to those or the south and usually rare inland.

The Snow-Bunting is a common winter visitor in varying numbers to the coasts and islands of Ulster, coming annually as far south as Dublin Bay on the east and Achill on the west. As we proceed further south its visits are found to be less regular and its numbers greatly diminished. Special winters are marked by its appearance on the coasts of Munster and Southern Leinster, but it is there looked upon as decidedly unusual.

The occurrences of this species in inland localities are scattered, and, as a rule, exceptional; yet I have records of it, sometimes in Hocks, from nearly every county. On the Curragh of Kildare (a great, open common) flocks are often met with in severe winters, though absent at the same time from the surrounding country.

October to March is the ordinary season of this bird's appearance in Ireland, less usually September to April. Cox twice saw it on Dublin Bay on the 1st May. On the islands of the west and north it has occurred in Mayor later, as the following entries show :- Tearaght, 3rd May 1887; Slyne Head, 17th May 1889; Aranmore, first week in May 1883 (when two were shot almost in full summer plumage); ditto, 28th July 1898 (an adult male sent to Mr. Barrington); ditto, 18th August 1883 (noticed by Mr. Henry Williams). Aranmore, a large island on the Donegal coast, where the last three occurred, is bare and elevated, and the Snow-Bunting is a common bird there during winter; so it is on Tory Island, Inishtrahull and Rathlin Island; but even on those northern islands large flocks sometimes arrive in mid-winter (*Migration Report*).

The movements of the Snow-Bunting in Ireland as elsewhere, are to a great extent uncertain, being much influenced by the severity or mildness of the winter, and by the erratic character of the bird itself; thus its numbers vary greatly from year to year, even in the localities most regularly visited.

The long stone piers and the sandhills on the Dublin coast are favourite resorts; so, to a less extent, are mountains near the sea, like Brandon in Kerry and Knocknaree in Sligo. The hardiness of the Snow-Bunting was illustrated in January 1886, when twenty never left the Black Rock, Mayo, during nine days that the spray was flying over the rock.

This bird is sometimes found feeding in company with flocks of Larks and other Passeres.

Family STURINDÆ

THE STARILING. *Sturnus vulgaris*, Linnæus.

Now nests in every county; but though the number of those which breed is increasing, the hosts of winter immigrants are vastly more numerous.

The steady extension of the Starling's summer range in Ireland is of a piece with what has taken place in Scotland. Informants in various parts of the country speak of its having commenced to breed in more or less recent years, and there is a general concurrence of testimony as to its increase in numbers. Near Killybegs, in

Western Donegal, it commenced to breed in 1890, and about Glenties in 1893. Throughout the mainland of Kerry and Western Cork it seems to be still unknown in summer, while in Waterford and Wexford only a few scattered pairs build, having been first noticed in my district in 1887. That Wexford should be so little resorted to for reproduction is the more remarkable, as it is the county where the chief immigration arrives in autumn. This shows how disconnected these two facts are. Many islands-as Rathlin, Aranmore, the Arran Islands, and Valentia - contain long-established breeding-stations though the neighbouring parts of Donegal, Galway, and Kerry are not thus resorted to.

No feature of Irish bird-life is more obvious than the numbers of Starlings which busily explore every field in rotation from October until March. I am not speaking of the small flocks of home-bred birds to be seen from June onwards, nor of the bands of these restless creatures which occur at lighthouses every month in the year, but of the great autumn immigration. This sometimes begins in September, and through October and the first half of November it is at its height. The cross-Channel flocks are seen winging their way towards the Irish coast, sometimes in continuous rushes night and day, and accompanied by birds of the Thrush family. On our south and south-east coasts they fly north or north-west, on the Antrim coast south-west or west, but it is remarkable how few are seen departing in spring in the reverse direction (Migration Reports). On arriving, they do not seem to delay on the shore, but to continue their flight into the heart of the country. The Rev. A. Ellison, when living up a valley sixteen miles from the Wicklow coast, has described the low flying flocks passing south-west in October with a whizzing sound and with amazing speed. One column consisted of many thousands in uninterrupted array. They pass through Waterford along, the valleys that lead in the same south-west direction. Through winter and early spring they overspread the whole country and visit at times the most remote islands, even of Western Connaught, where so few migrants go. When severe frost or snow sets in there is a renewed influx into Ireland, and a general southward and south-westward movement along our coasts and the Shannon Valley. All day long through the falling snow the race for life has been watched streaming towards Kerry, whose peninsulas and islands enjoy that freedom from frost which makes them the last resort of the refugees. After the snow-storm of February 1895 the Rev. W. S. Green, on visiting the cliffs of Moher in Clare, found cartloads of dead Starlings, chiefly on the landward side of the fence that ran along the top of the cliffs. Visitations of Starlings during snow are reported from Rathlin O'Birne; but the strangest observations made at this, the most western island of Donegal, and at Eagle Island and Blackrock, west of Mayo, are of flocks flying west, as though to perish in the Atlantic.

Starling-roosts, where the flocks that roam over the country assemble on winter nights, are too numerous to be recounted. There was one here in grounds covered with tall laurels extending round the lakes, and the sky used to seem covered with the moving hosts performing their beautiful evolutions every evening. But after the frost of 1854-5 they almost disappeared, and now Starling-roosts are established in other places miles away, usually in groves of laurels. Reed-beds round lakes are, however, resorted to in other localities, as near Carna in Connemara, an unreclaimed country destitute of trees (Teesdale). But a more singular roosting-place is the roof of St. Patrick's Cathedral in the heart of Dublin, to which flocks of Starlings amounting to about 2,000 have habitually resorted.

Starlings breed in the marine precipices on various islands and various parts of the coast. Between Sligo and Bundoran I have seen them nesting in the roofs of thatched cottages, an unusual sight in Ireland, though there is no want of such cottages. Slated roofs or hollow trees are the sites commonly selected. A pair of Starlings used to build twice every season in a hollow apple-tree at Brook Lodge, Waterford: The tree was split open by a storm, when a mass of nesting-materials two feet deep was disclosed that had filled the cavity. The bottom, which represented the earliest nest, was nearly four feet from the orifice.

The Dublin Museum contains a white specimen of this bird, and a clutch of pure white eggs has been obtained by Dr. Blake Knox.

THE ROSE-COLOURED STARLING. *Pastor roseus*, (Linnæus.)

Rare and irregular visitor in summer and autumn.

This bird has been obtained in about twenty-six scattered instances distributed thus:- in Munster, eight; Leinster, seven; Connaught, one; munter, ten. It has occurred repeatedly in Western Kerry, Clare and Donegal; once in the Arran Islands (the only instance in Connaught); as well as in Dublin and elsewhere on the east coast. The months of its capture, when mentioned, were as follows:- June, four instances; July, seven; August, three; September, two.

Thirteen occurred from 1830 to 1840, including four in 1838, three in 1833 and three in 1836. In several instances the birds taken were feeding on cherries, raspberries, or other fruit in gardens. It is remarkable that though so many visited Ireland in Thompson's time, we seem to have no record of the capture of the Rose coloured Starling between 1879 and 1899.

Kerry. - One near Kenmare, 12th August 1836; one at Ballyheige Castle; one at Waterville; one at Derryquin in July 1841; an adult specimen, probably one of the above, is still in the Chute collection, near Tralee.

Clare. - One at Roxton about 1808; one in same county about 1830.

Tipperary. - One captured alive at Ballybrado, June 1833; one at Longfield, Cashel, 7th June 1834.

Wexford. - One near Wexford town in 1820; one shot on the Tuskar in November 1854 or 5, by William

Higginbotham, and sent to Major Vicary in Wexford (as stated by Higginbotham in 1882).

Dublin. - A female near Dublin, 20th July 1833; one at Newbarron, near Fieldstown, 7th or 8th July 1838; one at Ball's Bridge about 1856 (Proc. D.N.H. Soc. 12th December 1856, p. 35); one at Blackrock, about 1864 (Science and Art Museum Register).

Meath. - One near Ashbourne, about ten miles from Dublin, June 1838.

Galway. - One shot among Starlings on the Arran Islands, August 1837.

Monaghan. - An adult near Carrickmacross, August 1855 (Proc. D.N.H. 800. 14th March 1856).

Down. - An adult male, near Donaghadee, July 1836; one at Hillsborough, July 1836; a male, Bangor Castle, 1st September 1838.

Londonderry. - A male at the Umbra, Magilligan, about 10th September 1838; two often seen at the Umbra, Magilligan, during summer 1846, "very fond of fruit."

Donegal. - One at Woodhill, Ardara July 1825. (Proc. D.N.H. Soc. 1838, p. 6, and letter from Mr. W. Sinclair) one at Fintragh near Killybegs, July 1833 (Mr. W. Sinclair); one, near Ramelton, 1879 (Mr. Sheals); one five miles from Londonderry, on 9th June 1899 (Campbell, in *Irish Nat.*, 1899, p. 186). Unless otherwise stated the above particulars are taken from Thompson

Family CORVIDÆ.

THE CHOUGH. *Pyrrhocorax graculus*, (Linnæus.)

Resident on most of the precipitous coasts and islands, as well as in some mountain-cliffs.

No bird is more characteristic of the cliff-scenery of Ireland than the Chough. In no country probably does it flourish in its natural strongholds more undisturbed. Its withdrawal from certain districts cannot usually be traced in Ireland to the interference of man; yet on the whole it is a diminishing species. Though the Chough has disappeared from the coasts of Dublin since 1852, and more recently from Wexford and the eastern parts of Cork, it breeds regularly in the sea-cliffs of Waterford, where there are some twenty nesting-places, but from the Comeragh mountains it has long since vanished. In the western parts of the co. Cork, especially on the promontories and islands, it again becomes common, but is probably nowhere more numerous in Ireland than on the Kerry coast, where flocks of a hundred have been seen. It is found in Clare and Connemara, while in the Arran Islands it is quite common, as it is in Achill and the intervening islands, and the Rev. W. S. Green saw sixty-four fly over Inishbofin. We find it along the lofty north coast of Mayo, round Donegal generally, and in a few places in Antrim, chiefly on Rathlin Island. In Down, whose coasts are low, it bred in the Mourne mountains since Thompson's time, but I cannot ascertain that it does so still. Its chief remaining nesting-places in mountain-cliffs are in Donegal and Sligo and the Mamturk mountains, Connemara, but it bred much further from the sea in the mountains of Fermanagh within the memory of my informants. Thus it is found generally along the west coasts, partially on the south and north, and is absent from the east coasts, which are generally low.

The Chough and the Jackdaw do not apparently molest one another; nay, I have known of a Jackdaw's nest which was built beneath that of a Chough in the same chasm. Still the increase of the Jackdaw has been observed in many places to coincide with the diminution of the red-billed bird, which is called 'Daw' or 'Jackdaw' in districts where the true owner of that name is still unknown. In the extreme west, where the Chough abounds, the Jackdaw usually absent. Mr. Hart attributes the disappearance of Choughs in his locality to the Grey Crows, but I have seen the former chase the Crows, as well as the Raven. I once saw two Choughs energetically attacking a pair of Ravens; they shot up into the air and darted down on the latter, whose heavy flight made them helpless against their agile tormentors. I have not found the remains of Choughs near any of the Peregrine's eyries I have seen, though the bones of Rock-Doves are common there. Yet the Rock-Dove continues to be a more numerous species.

I know no bird that wanders less from its home than the Chough. Though one of the most restless of birds, and possessing an ease and buoyancy of flight far beyond any of the Crows, and delighting to disport itself on the wing, yet it contents itself here at all seasons with its mile or two of sea-cliffs and with excursions into the neighbouring fields in search of its insect-food. In Mayo and Donegal, however, Choughs betake themselves in winter to lower parts of the coast, like the Mullet and Dunglow.

The Chough may be detected at a considerable distance by its clear, shrill scream, so unlike that of other *Corvidæ*. This is usually uttered on the wing, but when the bird delivers it on the ground it is accompanied by an upward jerk of the wings and tail. When the cry is prolonged it ends in a second note. I have heard one Chough when chased by another utter an unusual sound like mewing, or the bleating of a young lamb. The principal food is unquestionably insects and their larvæ, for Choughs are fond of beetles, caterpillars, and worms, and with their pointed beaks they pick up tiny insects; but they also eat corn at times, for I found that some castings in one of their nests held scales of cereal seeds as well as matter like wood-shavings, while others contained elytra of beetles. It has been said that Choughs eat various animals obtained on the shore, but, familiar as I am with these birds for forty years, I have never remarked them feeding there although my attention has been directed to this subject, nor have I the least reason to think that they feed on carrion.

It is surprising that the graceful and buoyant flight of the Chough should be compared to the heavy, lumbering flight of the Rook, from which it may be so easily distinguished. A pair of Choughs, when flying from place to place, often perform a series of curves in the air, rising each time with a scream, and then dropping with almost closed wings, only to re-expand them suddenly with another cry, and another upward sweep. I have seen six performing simultaneously a series of swoops or summersaults, and parties of Choughs will occasionally go through wonderful gyrations at a great height, while they scream in wild excitement.

Choughs at times associate with Rooks when feeding. In the fields they will sometimes amuse themselves by running rapidly here and there. Mr. Wallis remarks. The cock courts the hen in a very pleasing manner, caresses her and rubs the back of her head with the under-side of his bill, digs up a worm and puts it into her bill.

The Chough in Ireland has not much fear of man. It has been known to perch on the roofs of houses, and, having selected an apparently inaccessible site in the cliffs for its nest, it will enter by dropping suddenly with closed wings, and then dart into its cave regardless of persons in a boat beneath. Another indication of fearlessness about their nest, which Choughs share with Ravens and other cliff-birds, is that rocks at the entrance of their nesting hole are sometimes whitened by droppings. The Chough, moreover, lays year after year in the same nest, and sometimes lays there a second time the same year after the first clutch of eggs have been taken, while even when the nest has been wholly removed it will construct another the following season in precisely the same spot. Its attachment to a well-chosen site is remarkable. I know a chasm tenanted by a pair of Choughs, or their descendants, since 1858.

When it is stated that the Chough, like the Rook or Jackdaw, lives in colonies, this can only be applied to the flocks that form after the young are flown. Unlike the Rook or Jackdaw, the Chough selects a solitary breeding-place. Along favoured parts of our Waterford cliffs the nests occur on an average a mile apart. On the west coast, where these birds are common, more than one pair sometimes breed in a chasm if suitable Bites are few, but even in the west I have usually seen each pair breeding alone.

Nor is the Chough's home a crowded haunt of sea-birds (it shuns such spots), nor yet where the cliffs descend sheer to the ocean, nor on open spurs of rock, notwithstanding text and illustration to the contrary.

The choice of the Chough usually falls on a shelf, fissure or cavity over or in the roof of a cave into which the tide flows. Sometimes it is at the vertex of the cavern's mouth, sometimes quite within, shrouded in gloom. Thus the Chough is more truly a cave-weller than any of our birds except the Rock-Dove. Even when a fissure in the cliff is selected there is probably a cave somewhere beneath it, and such fissure will usually be found to have its mouth partially blocked by lodged fragments. Low down in a lofty cliff I have found a nest in a narrow cave which descended by an open fissure to the sea, and at the inner extremity of this cave was a large stone, behind which in the darkness was the nest with four eggs. Sometimes the breeding-cave is vast and lofty, at others small and low, and in an escarpment scarcely to be distinguished as a cliff. One such site is in a little rocky creek, close beneath a high-road and a coastguard station. But not confiding itself to the vicinity of the beach, the Chough often breeds at a great elevation. The disused slate-quarries of Valentia are on a mountain about five hundred feet above the sea. There is a large tunnel in which a cistern was once erected on massive beams, about ninety feet from the floor, and in one of the joist-holes beneath this cistern a pair of Choughs were feeding their screaming brood when I visited the spot in 1887. Where the cliffs are exposed to the full sweep of the Atlantic rollers Choughs dare not breed low down, and therefore on the isles of Kerry and the Arran Islands they breed in upper cliffs overlooking the interior of the islands, or in a fissure behind a split portion of the cliff that is leaning to its overthrow, which forms a protection against surf and storm. But still more singular sites are chosen. Mr. Warren wrote, after a visit to the North Mayo coast: "There was a large cave running under the land from the sea for over a hundred yards, ending in a circular opening up into a grass field. This was like a great caldron, with a good depth of water when the tide was in. In the sides were several Jackdaws' nests, and one Chough's in a hole, about six or eight feet below the edge. While we were there, the Choughs fed their young several times."

I saw a similar sight in an island off the Galway coast, a pair of Choughs having their nest in the side of a "puffing-hole," up which the spray came betimes like smoke. A poor Chough was shot sitting on her eggs in the side of a "swallow hole" of great depth and surrounded by hollies in the top of the limestone mountains of Sligo. The overhanging side of a deep, narrow gorge is sometimes chosen. In Donegal we visited a little port with sandy shores, and, seeing Choughs, we wondered where they could breed; but above the village a river traversed a rocky tract, and there, in the side of a small canon through which the river flowed, a pair of Choughs annually nested, a mile and a half from the open sea. In the Antrim mountains, four hundred feet above the neighbouring sea, Mr. Praeger discovered a Chough's nest in a narrow gorge in a chalk cliff. It was in a deep but wide-mouthed recess, some fifteen feet above the stream, and the same depth below the surrounding hill-side. The Chough builds occasionally within ruined castles near the coast, in a joist-hole of the upper floor, or on a ledge of masonry; and the Rev. A. Delap has known it to breed in a ruined house.

The nest, when placed on an open shelf or in a wide cavity, is large for the size of the bird and neatly built. Some coarse sticks of furze or blackthorn form the foundation; but the composition of the body of the nest is characterized by fine heather-stems though on the Tearaght where these are absent, withered stems of annual plants are used. Within these materials is a little dried grass, the nest being always thickly lined with sheep's wool and cow's hair.

Five eggs have been found on the Blaskets on the 10th of April but the earliest date on which I have found a full clutch was the 18th. They are generally laid during the last week in April, or the first week in May. The number of eggs is usually four, frequently five, not unfrequently three, and in several cases I have known a Chough to sit on two only. The yolk of the fresh egg and the skin of the unfledged nestling are quite as red as

the bill of the adult bird, differing in intensity of colour from the yolk of an, other bird's egg I know, except that of the Black Guillemot, which has a deep orange yolk. Irish Chough's eggs measure from 1.68 to 1.4 inch in length, by 1.15 to .97 inch in breadth; but one in my collection, a monster as compared with the rest of the clutch, is 1.8 by 1.12 inch. The average size is 1.54 by 1.06 inch.

The larger and more richly marked varieties are oftener found in the west of Ireland than in Waterford. I have only seen two eggs zoned at the smaller end, but zones of spots at the larger end are frequent. In more than one set a pale, yellowish zone interrupted the dark markings. Strong contrasts sometimes occur among the eggs ill the same nest, one having the remarkable black streak sometimes seen in Chough's eggs, one or two others having the markings chiefly confined to a cap or zone, and another having longitudinal markings scattered over it. Some are minutely speckled all over, others show a few bola spots. The most beautiful variety I know, only got in one place, has the ground of a pure white, with a few bold, deep brown spots. Some eggs are rich in lilac undershell markings. The ground, usually white, is sometimes of a warm cream-colour, more rarely with a rosy bloom, and sometimes it is yellowish or brownish; but a rare variety, which occurs in Ireland as well as in Cornwall, has the ground-colour tinged with green. This seems a reversion to the green ground common to eggs of the Crows, and if we would account for its general absence in those of the Chough, let us reflect that this bird breeds in caves and dark fissures to a far greater extent than any of the family. The white eggs of the Puffin, also laid in dark holes, sometimes exhibit brown and grey streaks as if reverting to the Guillemot type.

Small parties of Choughs which are not breeding may be observed in May, associating in the fields or roosting in chasms, and a pair frequenting a favourite cave have been known to cease to breed, possibly owing to the age of one of them; but, from whatever cause this took place, the pair remained together in the locality for years.

THE JAY. *Garrulus glandarius*, (Linnæus.)

Resident in those counties watered by the Suir, the Nore, and the Barrow; wanders more or less from these to neighbouring counties. Unknown in the rest of Ireland.

In 1812, according to Dubourdiou, the Jay was still found at Shane's Castle, co. Antrim, having been a more frequent species before the woods of Portmore were cut down. It seems to have disappeared from Ulster before Thompson's time, for he tells us that it bred near Youghal in 1837 and was common about Bandon in 1839, while I have the testimony of several persons that it was formerly found in the Blackwater Valley in the same county (Cork). It was, however, exterminated there for the sake of its wing-feathers, which are used in making salmon-flies, and it is not now found resident anywhere in co. Cork. At the present day it breeds commonly in the woods of Northern Waterford along the Suir Valley, and in the counties of Tipperary, Kilkenny, Wexford, Carlow, Queen's County, King's County and Western Kildare in the Barrow Valley, It is not however common in all parts of those counties, e.g. North Tipperary and East Wexford. On the other hand it is known to be increasing in the counties of Wexford, Carlow and Waterford, and it is decidedly spreading. It will thus be seen that its breeding range is confined to one part of Ireland, which is contained in the Province of Leinster and the adjoining part of Munster.

It wanders, or occurs irregularly, in the counties of Cork, Limerick (near Bruff), South Waterford, East Galway, Westmeath, Wicklow, Dublin, Meath and Louth. In the last county I have heard of but one pair in 1894-5 (Mr. Pentland), but in Dublin Jays were believed to have nested in the woods near Balbriggan in 1850, and three pairs of fresh wings were shown to Mr. G. H. Kinahan; while birds were seen near Malahide in 1857, and a pair previously in Stillorgan Park (Proc. Dublin University Zool. Assoc., 25th November 1854). The occurrence of the Jay in co. Dublin should be the less incredible, as Rutty enumerated it among the birds of that county in 1772. It has been observed at several places in East Galway, but not elsewhere in Connaught; Wandering flocks of thirty or thereabouts have been noticed in autumn. The reported occurrences of much larger flocks in Dublin and elsewhere must be received with caution, as the Jay is an unfamiliar bird to most people in Ireland, where the Mistle-Thrush is often called "Jay."

Mr. McCuaig, Clonmel, had a tame Jay which imitated one of his shop-assistants calling his companion. It also barked like a dog, and mewed when it wanted food, as it heard the cat do for the same object.

Mr. E. Williams, who has preserved a great many examples, thinks that the Irish Jay is of a warmer colour than the English bird.

THE MAGPIE. *Pica rustica*, (Scopoli.)

Resident, common and increasing. Breeds in every county, but scarcer in the extreme west.

Various old writers on Ireland, from Giraldus down to Fynes Moryson in 1617, testified to the absence of the Magpie; but Robert Leigh of Rosegarland, co. Wexford, writing in 1684 on the Baronies of Forth and Bargo in that county, remarked: "About eight years ago there landed in these parts.... a parcel of Magpies, which now breed," &c. Another contributor to the same writings speaks of this flight as "under a dozen," which, as he remembered, came with a strong easterly wind (Barrett Hamilton, in Zool., 1891, p. 248). The helplessness of the Magpie in a storm at sea is shown by a notice from Rockabill, 7th January 1889: "Two Magpies arrived on the Bill and made several attempts to reach the mainland, but were driven back by a strong wind from W., and died after four days" (Migration Report).

The Magpie, thus introduced, spread rapidly; and is now to be seen everywhere through Ireland, except on the barest moorlands. It becomes scarcer in the treeless districts of Western Kerry, Connemara, Mayo and Donegal, but some breed on the Arran Islands, Achill and Rathlin. It is by no means confined to the wooded parts of the country, being very common in many exposed localities, where hawthorn bushes form its only retreat. Though usually seen in pairs or small companies, a large flock sometimes occurs in winter, when these birds assemble in some favourite roosting-place, such as a plantation. Mr. Moffat has seen thirty fly out of one tree, and Mr. G. H. Kinahan, writing from CO. Donegal in December 1882, said:-"A flock of three or four hundred visited us the other day." The light-keeper at Hook Tower, at the end of a long rocky promontory, wrote, 18th October 1893:- "Magpies very numerous close to station, probably one hundred and fifty to two hundred" (Migration Report). Though the visits of the Magpie to isolated light-stations are rare and irregular, there are some such instances nearly every year.

The boldness of this bird in Ireland is in proportion to the degree of security it enjoys. The peasantry do not molest it, though it builds its conspicuous nest close beside their dwellings; for they have a belief that, so long as they let it alone, it will not do injury near its nest, but that if they rob it of its eggs their chickens will be made a prey. It hops about openly on the roads and among the cattle, but is exceedingly vigilant and difficult to approach. It is very pugnacious, for a Magpie and a Kestrel fighting on the ground were taken, one in each hand, both torn and bleeding, while on being placed in a cage, the Magpie immediately attacked the Kestrel again. On looking out of the house of a friend who protects these birds, I saw two gripping one another in a fierce combat on the lawn, while six others danced round them chattering. I have, however, seen a Magpie sitting quietly in the same bush with a Hooded Crow.

This bird will conceal itself in the top of a lofty fir-tree in the early morning, and from this look-out will watch the small birds to their nests and plunder them.

The Magpie sometimes busies itself about its nest as early as February, working only in the early hours; but it usually lays in April. Where suitable sites are few, it will build year after year in the same tree, and Dr. Blake Knox has found two old nests with a new one on top containing the Magpie's eggs, while the lower nests were occupied by a pair of Starlings and three pairs of House-Sparrows. In plantations, however, a different tree is often selected each year old nests being often seen near the occupied one.

But the favourite site is the top of some tree near a farm-house or cottage, where the huge dark ball this bird constructs is conspicuous. In default of trees the "Mag," as it is called, builds in any dense bush or hedge beside a cottage, of which it is a usual accompaniment. In the Arran Islands and Rathlin Magpies sometimes build in the ivy on rocks, and the Rev. A. H. Delap has noticed them do so in a steep bank in Donegal; while near the coast of Clare I was shown a large deserted house, on the chimney of which a Magpie I saw close by was said to build.

On lake-islands the nest is placed in any low bushes. I have seen it but two feet from the ground on Lough Ilion, in Donegal. Briar stems and hay are used where sticks are absent, as in the Arran Islands. Within the mass of sticks a cup of clay is formed, the bird working herself round and round to shape it. This is lined with root-fibres and dried grass. The number of eggs is usually six, but sometimes five, and not unfrequently seven.

White and buff coloured birds have been obtained.

THE JACKDAW. *Corvus monedula*, Linnæus.

Resident, common and increasing. Breeds in every county, but not as a rule in the western islands.

The Jackdaw is more local and far less numerous than the Rook, but its growing colonies are to be found in nearly every town, as well as in ruins, cliffs and rabbit-warrens. It breeds on the Saltees, Lambay and the Copeland Islands, but not on the isles of Kerry, Galway, Mayo or Donegal (except Tory Island), nor on Rathlin. As regards Achill, indeed, Mr. Sheridan has noticed a pair or two breeding in the church near Achill Sound, but from the majestic cliffs of this island the favourite haunts of the Chough) the Jackdaw is absent. It has, however, settlements in the cliffs of Moher in Western Connemara, at Crohy Head, Horn Head and elsewhere on the Donegal coast, at the Giant's Causeway, Howth Head, and in our Waterford cliffs, where it is numerous.

From the Migration Reports we find that, though much less frequent than the Rook, the Jackdaw visits the remotest islands and rocks in the same desultory manner, only to leave them again speedily; while a few accompanied the remarkable flights of Rooks that arrived at the Skelligs and Tearaght from the south-west in November 1884, and on other occasions.

The Jackdaw does not do extensive damage to crops like the Rook, but most large flocks of Rooks in winter are accompanied by some of this species. These breed in many rookeries, among the dense masses of nesting-materials that accumulate from year to year. The Jackdaw will also occupy the deserted nest of the Rook or Magpie, and has been known to make use of that of the Heron. Dr. Blake Knox has found Jackdaws, Magpies, Starlings, House-Sparrows (and a Long-eared Owl higher up), all breeding harmoniously in dense growths of branches round the trunk of the same tree, where sticks and rubbish had accumulated. In sea-cliffs, Jackdaws will breed in crevices close beside the nests of Cormorants, and when near the nest of the Chough the two species do not seem to be hostile. Still, a keeper has told me that, in the cliffs of the Sligo mountains, when a colony of Jackdaws had been established, the Choughs diminished, though I have no proof that the latter event resulted from the former.

In cliffs, narrow fissures are chosen, instead of the roomy cavity or shelf preferred by Choughs. The ivy on cliffs (Warren) and hollow trees are sometimes used as breeding places. Sir Douglas Brooke had seventy-three eggs taken from the same tree at Colebrooke, Fermanagh, where the Jackdaws pull the hair off the backs of the Red Deer kept in the park and line their nests with it. But trees are not so largely used as rabbit-holes, and I can cite many cases in which colonies of Jackdaws breed in these, both on islands and inland. In one case the holes used were in a flat meadow, the birds preferring them to the trees, of which plenty were within reach. The Jackdaws, in their attempts to build, block the holes with sticks and leave many outside which they fail to pull in; and the loft of a church-tower has been found covered many inches deep with the sticks which the Jackdaws had dropped, for they do not pick them up again. In our cliffs, Jackdaws do not lay until the latter half of April.

White specimens of this bird have occurred in Wicklow and Cavan.

THE RAVEN. *Corvus corax*, Linnæus.

Resident, breeding in the wilder cliffs, usually on the coast, also in a few mountains. Has become rare, except in the extreme west.

Rutty, in 1772, mentioned that Ravens frequented in numbers the neighbourhood of great towns and were held in some veneration for devouring carcases and filth; but it is far otherwise nowadays, and within the last fifty years the Raven has rapidly diminished throughout Ireland. It has been driven from most of its inland breeding-places, such as cliffs over rivers, and lofty trees in demesnes, like those of Curraghmore and Clonbrook and the islands of Lough Erne; while keeper and shepherd have waged war against it with gun and poison-though not so successfully as against the Eagles and Harriers-and it is now a much rarer species than the Peregrine or Chough, although it nests in some districts unfrequented by the latter. The coasts of Kerry, Clare and Western Cork are among its most frequented haunts, whence it visits the remoter islands without breeding on them. Two or three pairs still nest on our Waterford coast, and others in the mountain-cliffs of this county and of Tipperary. It has for many years ceased to breed in Kilkenny and on the Saltee Islands, but several pairs build in the inaccessible cliffs of the Wicklow mountains. It nested on Lambay Island, co. Dublin, until 1883. In the west it still breeds undisturbed on the Arran Islands, High Island, and the Twelve Pins of Connemara, while the cliffs of Mayo and of Achill Island are among its chief strongholds. The Raven formerly

bred in the mountains of Sligo, Leitrim and Fermanagh, but in Donegal it maintains itself at many points. in the cliffs of mountains, coasts and islands. From Tyrone and Londonderry it appears to be banished, though formerly resident there, but it still has homes in the mountains of Antrim and Down and on Rathlin Island.

Ravens frequently visit the islands of the west coast. On May 23rd 1882 thirty-six were seen on Blackrock, Mayo. The vicinity of their breeding-haunts often brings this bird into collision with the Peregrine, which fiercely attacks it. The Raven will try to slink off, skirting the cliff as closely as possible, or betake itself to trees if within reach, or crouch upon the ground if no concealment is available. In these cases the Peregrine cannot freely deliver its deadly stoop; but if the Raven incurs this terrible onslaught in the air and cannot rise above its enemy, it is said to turn on its back and present its feet to the Falcon. The Hooded Crow and Chough will pursue it, but, on the other hand, I have seen a pair of Ravens pursuing a Golden Eagle, with loud croaking, stooping at it repeatedly, although disregarded by the nobler bird.

Ravens love to build beside a colony of Cormorants, round whose nests they continually fly. I have seen one of them alight, with croaks and menacing attitude, in front of a hatching Cormorant, which responded by croaking in return, extending its head and neck and erecting its crest at the Raven; the chalky eggs are, however, often carried off. Ravens come down from the mountains to visit heronries, when all the Herons take flight in wild alarm.

The Raven is our earliest bird to breed, except the Heron, and often lays in February. I have descended an exposed headland, on the 16th March, between showers of snow, and found in a Raven's nest four little naked young, evidently hatched several days previously. The nest is sometimes placed in ruined towers and castles, and an instance occurred in 1868, in Londonderry, of Ravens breeding in the tower of Magee College. A lofty Scotch fir was sometimes used, and the top of a tall, fractured ash is mentioned as a breeding-place. I have always found the nest in a mountain or sea-cliff, occupying some spacious ledge or wide recess, and usually well overhung by the rock above. It is a very large affair; sometimes quite a cartload of coarse, crooked stems of furze, lined with dried grass and roots and a profusion of wool, and as it is built large enough for the five young when fledged, the eggs, or newly-hatched nestlings, look small in the middle of it. Points on which the Ravens perch near their nest are much soiled by them. When their home is visited by an intruder the old birds approach with shuddering wings, croak in a low tone and tumble in the air, and if the eggs are hatched these gestures are intensified.

Young are seldom seen on the wing before the first week in May. Their parents afterwards take them long excursions into the country, leading the way, and returning every evening in a long, straggling line to their breeding-cliff; but should the young return to their home in September the, old ones buffet them with their wings wherever they set foot, pursuing them in the air and filling the locality with angry croakings (Hart). Mr. Corbet told me that about 1857 two pure white young were found in the same nest.

THE CARRION-CROW.

Corvus corone, Linnæus.

Of such rarity, and so little known, that its footing in Ireland is probably fluctuating and precarious.

Writers from Giraldus downwards have concurred as to the absence, or great rarity, of the Carrion-Crow in Ireland. Thompson, who was the first to give definite information about it, states, on the authority of an English game-keeper, that one paired with a Hooded Crow at Glenarm, co. Antrim, and that others were subsequently killed there, while he also tells us that this species was sometimes met with near Belfast, feeding on carrion. His informants from Clonmel and Kilkenny believed that they had met with Carrion-Crows, but it does not appear that they had obtained specimens.

I have never seen the bird in Ireland, and I know of but four Irish specimens in existence. One, now in the Dublin Museum, was presented by Mr. Hardy, of Owens College, Manchester, who obtained and preserved it in Kerry in 1863 Or 1864. It was shot in the Gap of Dunloe, not far from Killarney. Mr. Hardy states that at about the same time he took eggs in Tork Wood, and saw several of the birds nailed to a keeper's rail Another specimen In the South Kensington Museum is from co. Cork. In that county, at the late Mr. William Corbet wrote to me, he had met with both old and young at Trabolgan, outside Queenstown Harbour. Mr. A. J. P. Wise informs me that in March 1884 he shot a Carrion-Crow and a Grey Crow, apparently mated, near Rostellan in the same locality, and that he had shot others there in previous years, as well as in Kerry.

A third specimen, from co. Clare, was formerly in the Warren collection, and is now in the Science and Art Museum, Dublin. From Mayo young birds, evidently reared there, were obtained in 1890, and one of these is in

the collection of Mr. Barrington. A large Black Crow, which took a number of chickens, is mentioned by Mr. Richards, of Barnagh, Belmullet.

In Down several persons mention the Carrion-Crow as a straggler to the district of the Mourne Mountains. Mr. J. Anderson reports that a brace are seen every spring. Mr. A. G. More was informed by Mr. B. Kane that one had mated with a Hooded Crow near Rostrevor. On an estate near Lough Neagh a pair have come every March, usually in the first week, for twenty-five years, staying a week or a fortnight (More's Life and Letters, p. 591). A nest near Belfast attributed to this species turns out to have belonged to a Hooded Crow, and the supposed Carrion-Crow in the Belfast Museum is a Rook (Barrington); but a recent specimen found dead on the beach at Murlough Bay, co. Antrim, by Messrs. Harvey and Standen was examined by them and its distinctive characters noted (Irish Naturalist 1896, p. 319). Less definite reports of others from different localities may be omitted, but rewards long offered for an Irish killed specimen have failed in result.

It is not meant to ignore the question as to the specific identity of *C. corone* and *C. cornix*, but they are treated separately for convenience.

THE HOODED CROW. *Corvus cornix*, Linnæus.

Resident throughout Ireland, breeding in the sea-cliffs and in trees inland.

In the twelfth century Giraldus Cambrensis wrote of Ireland: "There are no black Crows in this country, or they are very rare; they are all parti-coloured." He then mentions their common habit of carrying shell-fish into the air and letting them fall on rocks that they may be thus fractured. The same statements hold good to-day, this grey-backed Crow, or "Scald Crow" as it is usually called, being our common Irish species. It breeds in every county, being more common in those where game-keeping is neglected, and on the precipitous coasts; it also nests on all the principal islands, especially those on which sea-birds' eggs are plentiful, the Skelligs, Blaskets, Arran Islands, Inishbofin, Achill, the Donegal islands, and Rathlin Island. At Headborough, by the confluence of the Blackwater and the Bride Rivers, two hundred and eighty Hooded Crows were killed in twelve years, 1868-79; and as they are exceedingly wary birds this number indicates how common they are beside rivers. In parts of Ireland, however, as in northern Leinster, southern Ulster, and Sligo and Leitrim in Connaught, this species has been so greatly reduced by game-keepers as to be often quite rare, while in the wilder parts, especially on the coasts, it seems to be increasing.

Though no migration of the Hooded Crow is usually observed in Ireland, I am of opinion that some do visit us in winter. I have twice seen in co. Waterford a flock flying westward as immigrants do. One occasion was on the 10th December 1891, when I observed fifty or sixty flying up the Suir. Small flocks, indeed, occur irregularly at all seasons round the coast, even at the smaller and remoter rocks.

This bird will wade into the water in search of food until its legs are quite covered (Palmer).

After the dry summer of 1887 I saw an assemblage of Hooded Crows on the site of a dried-up mountain pond in the end of October. They continued to arrive there in the evening twilight. Hooded Crows evidently eat earthworms which come up out of flooded ground and are drowned, as they resort to such places. Beetles of all sizes are favourite food, and the bills of parents shot when feeding their young may be found full of them, and so are the pellets cast up by the nestlings.

The eggs are usually laid in April, but often in the end of March, and have been taken as early as the 15th of that month in West Cork, where as many as fifteen nests have been found in a peninsula of three miles and a half by two.

In marine cliffs the nest is placed not very far from the top, though well shielded by the rock above it; not in a fissure or cavity like the Chough's, but quite visible from beneath. It is built of bare crooked furze-sticks, dead briar stems, and the dried caudex of bracken; lined with wool and hair of various sorts, sometimes with ravelled cordage and bits of paper, &c.

When inland the favourite breeding-site is a fir-tree, not on the edge of the plantation but near it. This often overlooks a lake, river, or bog, where the birds search all day for eggs of waterfowl. They build high up next the main stem, and exceptionally on a lateral branch; but often in a tall hawthorn bush, and several nests have been found in such bushes along a river flat (Rev. W. W. Fleming). I have seen a Hooded Crow hatching in a hawthorn about eight feet from the ground beside a mountain road, in full view of passers-by, who, bent on their journey, did not care to rob her. Another nested in a bare poplar, on the far side of a stream which flanked another road. But the nest is rarely so exposed. In the treeless districts near the west coast, Hooded Crows habitually breed in any low bushes they can find on lake islands, a lake in Connemara being called Lough Phenogee after this bird ("Phenoge" in Irish). They will also build in the ivy growing on a rock over a lake. In

mountain-cliffs I have found a dwarf tree used, growing out of the rock, but have never found the nest placed as in the sea-cliffs, and never on the ground.

A couple of Crows will chase the unresisting Raven from their breeding-haunt.

The eggs are four or five, but I can refer to three cases of six in the same nest.

They exhibit great variety, some are almost covered with the Olive-brown markings, others are pale blue with grey and blackish spots. Specks of black are not uncommon at the large end. Some are zoned at the smaller end. A clutch nearly equally rounded at both ends contained three with these "Antarctic" Zones or caps, sustaining the theory that eggs so shaped are most subject to markings at the smaller end.

Mr. Palmer has observed that the Hooded Crows in Achill have the grey parts lighter in colour, and of a more bluish tinge than those further east, and I have noticed the same variation in birds west of Dingle, co. Kerry. A Crow seen near Rathlin light-house, by Mr. M. Gonagle, was all black except a collar of grey. It was in company with four Grey Crows.

THE ROOK. *Corvus frugilegus*, Linnæus.

Resident and numerous. Breeds in every district that is not destitute of trees and bushes.

This abundant species is believed to be increasing in various counties, and as its increase is practically unchecked, it has very much its own way in Ireland. It breeds throughout the country, in rookeries of all sizes, from a few nests to those huge colonies where woodland scenes resound in the breeding-season with the din of an innumerable host, and to which columns of Rooks converge in winter evenings from all points of the compass. In 'Rash Wood, co. Tyrone, the seat of Lieut-Colonel Ellis, the nests have been computed at ten thousand.

Rooks do not resort in the breeding-season to the bare moor-land districts, nor to the islands, unless those contain trees, like Lambay. They visit the western sea-board and islands in a desultory way from July onwards, usually up to November, and again in early spring. Their movements round the coast are frequent, but bewilder the reader of the Migration Reports by their irregularity. A certain number certainly arrive on our shores in a tired condition from Wales and Scotland. These are chiefly observed in late autumn, but also in March and April, making for the Irish coasts. A most surprising fact is that flocks are often seen departing westwards at various seasons from such extreme points as Slyne Head and Rathlin O'Birne. But more unaccountable are those immigrations arriving from the south-west which have been observed at the Kerry Islands. Such were seen simultaneously from the Skellings and from the Tearaght, which are over twenty miles apart, and they lasted through most of November 1884. The birds were flying at a height of 700 to 800 feet. These immigrations were renewed in October and November 1887, and November 1889, while similar facts were noticed at Blackrock, Mayo, in 1881. The Rooks which arrived there were so exhausted from their ocean journey as to allow themselves to be caught (Barrington in Field, 17th March 1894).* Great as the services of the Rook may be in destroying injurious insects, and eating the stems of couch grass, its destruction of crops is undoubted. When the young have left the nest they will live among the potato-drills, and poke out the potatoes wholesale. When the turnips are thinned a Rook will walk along a drill pulling up every plant, and in this way I have had acres ruined. Once the crop has recovered from the thinning, the Rooks neglect it. It is not easy to have one's crops watched at midsummer for eighteen hours, from dawn till dark.

In Louth the decrease of Partridges is attributed to the destruction of their eggs by Rooks. In Donegal Mr. W. Sinclair has observed them assembling to feed on the small shell-fish which are exposed at low water, when the sea weed is cut for manure. These are swallowed whole, and the ground is strewn with the Rooks' castings containing the shells.

The carnivorous habits of the Rook in hard frost are sometimes carried to such an extent that three have been seen to pursue an enfeebled Curlew and devour it. Mr. Parker has observed one pursue a Sparrow-Hawk, and take from it a Redwing which it was carrying off. Herons often breed in company with Rooks, and are attacked by the latter whenever they take wing, and Rooks also love to pursue the Kestrel.

With us they breed in March, but in Mayo frost and sleet so delayed them in 1866 that they were only building in April.

In the treeless west they nest in any low bushes where they are safe, as on lake-islands, or in hawthorns round a house where they are protected, A pair hatched out their young during seven years on the top of a tall isolated chimney-stack of Kilkea Castle, co.

*A flight of 5,000 or 6,000 passed over the Scilly Islands towards the north-west in October 1893, and in the November following some 4,000 or 5,000 visited the Island of Lewis (Field, 3rd March, 7th April 1894).

Kildare, and several pairs built on other chimneys, the nests being placed between the chimney-pots. In old rookeries the dimensions of some nests, annually added to, are enormous. Mr. Saunders describes a mass of sticks at Malin Hall which measured six feet four inches wide, and was built round seven or eight stems of considerable thickness. White varieties have been repeatedly preserved by Messrs. Williams and Son. Buff and brown Rooks have also occurred.

Family ALAUDIDÆ.

THE SKY-LARK. *Alauda arvensis*, Linnæus.

Resident. Very widely distributed. Breeds commonly in every county. Numbers increased in winter by immigration.

Every tract of Irish ground where trees do not grow seems to afford a home for the Sky-Lark: Mountain tops, moors, pastures, arable land, sand-hills, marine islands, on all of them this bird breeds, though not in equal numbers. It prefers the open country to that which is much planted and enclosed, and dislikes nesting in narrow and deep valleys. It is the only bird commonly seen on the most desolate moors, as in Connemara and Western Mayo. I found it very frequent in the Dunglow district, Western Donegal, and it breeds commonly on Rathlin, Tory Island, Achill, the Arran Islands, and even on the Blaskets.

The Sky-Lark does not seem to leave any part of Ireland in winter, but there is a great immigration from beyond the sea in October, which diminishes in November, but returns in February, as Mr. Barrington's catalogue clearly shows. Thompson remarks upon the flocks that arrive in the north from Scotland, even in mild winters. Mr. H. Blake Knox has described the immense numbers that come from the eastward to the Dublin shore, but it is by Wexford that the great majority of these visitors pass into Ireland, as is evident from the specimens sent from lighthouses. In Cork and Kerry the winter increase of the species is very noticeable. In snow a fresh immigration sometimes takes place en masse, a tide of birds flowing into Ireland in tens, hundreds and thousands (*Zool.*, 1868, p. 1190), while down the Shannon lakes flocks speed towards the south (Parker). During intense frost with snow the streets of Dublin are invaded by them. No bird is more constantly on the move in winter, both inland and round the coasts, though the notices from Connaught light-stations are insignificant in number as compared with those of the east coast (Migration Reports).

The song seldom commences until the beginning or middle of February, and it may be heard late into July. After becoming silent in August, the Sky-Lark often sings again in September, October and November. In June it will sing at 2 A.M., and also in the evening twilight. Females have been shot in the act of singing.

I have found five eggs in a nest, but four is the usual number. They sometimes vary greatly in colour. I have a set in which both the ground and markings have a green tint.

THE WOOD-LARK. *Alauda arborea*, Linnæus.

One of the rarest and most local of our resident birds. Formerly found in Munster, Leinster and Ulster.

Thompson stated that in his time the Wood-Lark was to be found in Cork, Waterford, Armagh, Down and Antrim, and that in the two latter counties it might be heard singing in its favourite localities almost daily from September till June. He quotes Rutt, 1772, as placing it among the birds of Dublin, and Kinahan met with it near Donnybrook in 1851, and heard it singing from February until June. Watters in 1853 mentioned a locality in co. Wicklow where it had been repeatedly observed, while singing on a branch, by Mr. Lamprey. This gentleman exhibited a pair, captured during the ensuing winter, before the Dublin University Zoological Association. It is most interesting to be able to quote the recent experience of Mr. Barrington, who, on 21st April 1894, saw a Wood-Lark's nest in the same district where Mr. Lamprey had found the bird forty years before, and which it doubtless had continued to frequent unobserved. This nest contained three young and an addled egg, which latter I have examined. It was found in a semi-wild district, full of small dry valleys with some plantations, brows of furze, patches of dead bracken, with cultivation here and there. It was placed under a broken bracken, with cultivation here and there. It was placed under a broken bracken, which concealed it. Five Wood-Larks had been observed about the place since the previous October, through the winter of 1893-4.

on the 3rd September 1898 Dr. E. Blake Knox met with a small flock in another part of Wicklow, and shot one bird.

M H Blake Knox referring to his mention of the Wood-Lark as an abundant winter-visitor, wishes this to be withdrawn. (Zoologist, s. p. 2018 [1870].)

The late Mr. Corbet of Rathcormack, co. Cork, obtained two specimens there in January 1887, which are in the Dublin Museum. He said that he usually met with them in snow, but that they used to breed at Doneraile and near Castle Hyde, Fermoy, where I heard that a nest had been found about 1887 in a meadow. Old people recognized the bird as having bred there years before. Mr. Corbet had caught five at Trabolgan on the coast near Queenstown.

Several persons living in Cappoquin, co. Waterford, have told me that they used to take Wood-Larks in that district in the autumn and had them in cages, but they place the time as far back as 1870. The vicinity of Lismore was another haunt mentioned. The bird thus seems to have inhabited the Blackwater Valley from Cappoquin to Castle Hyde, the practice of bird-catching having led to its disappearance.

I have notices of Wood-Larks observed at Straffan, Kildare, about 1874, near Banagher, King's Co., about 1850, and near Rynn, Queen's Co., where Mrs. Croasdaile, in June 1874, observed one twice rise from a tall tree and float round in a wide circle, singing as it descended.

The "Belfast Guide" (1874) stated that this bird then occurred very sparingly in three localities in the co. Down. I have no more recent record of it in the north.

A specimen sent to Mr. Barrington was shot on the Tearaght Island, off Kerry, on the 20th October 1887.

THE CRESTED LARK. *Alauda cristata*, Linnaeus.

Has been once obtained in Ireland.

Thompson mentions the description and figure of this bird in the Dublin Penny Journal, of February 27th 1836 ("Vol. IV, p.276). The writer, who signed himself "W. R.," stated that he killed it near Taney, co. Dublin.

Sir W. H. Russell, the celebrated War Correspondent, favoured me in December 1897 with the following information;- "The notice and figure of *Alauda cristata* were sent by me to the Dublin Penny Journal in 1836. I, then a boy of fifteen, was out shooting Larks in the stubble. I brought home a miscellaneous collection, and my grandfather picked up one Lark with a large tuft, which I had remarked where I picked it up, and asked if it was among the other Larks. He told me to take it to a Mr. Colville, a member of the Royal Dublin Society, to whom I was accustomed to take any birds I did not know, and he immediately almost declared that it was a Crested Lark. He got down a volume of Buffon, illustrated, and with the plate compared my bird, and found it identical with the *Alauda cristata*. I made a tracing of the bird and filled it in and sent it to the Dublin Penny Journal. I can only remember my pride and pleasure at seeing the reproduction."

THE SHORT-TOED LARK. *Alauda brachydactyla*, Leisler.

Has once occurred on the autumnal migration.

An adult Short-toed Lark was shot by Mr. R. Widdicombe on the 11th October 1890, at the Blackrock Lighthouse, on the most western isle of co. Mayo. It was sent in the flesh to Mr. Barrington, who has preserved it in his collection. It was inspected by Seebohm (Ibis, 1891, p. 586).

During the same month, October 1890, four other rare birds were taken on the Tearaght, the most western island of Kerry, viz., Red-breasted Flycatcher, Lesser Whitethroat, Yellow-browed Warbler and Mealy Redpoll. All but the last were eastern or southern species, of very great rarity, or unique, in Ireland.

Order PICARIE.

Family CYPSELIDÆ.

THE SWIFT. *Cypselus apus*, (Linnæus.)

Summer-visitor. Very common about towns and suitable buildings, even in the west.

The Swift has evidently extended its breeding-range considerably in Ireland since Thompson's time, when it was a rare bird in Kerry and Donegal, so that he spoke of it as but partially distributed. It is still local in Kerry, where it is not common except about the towns, but I have seen it at the Great Skellig. In Donegal it is more wide-spread, and breeds in many localities as it does in Galway and parts of Mayo; but while it has colonies in the towns, and ranges widely over lakes and country parts, it is seldom met with on the moors and mountain districts of Western Kerry or of Western Connaught. Though common in its season throughout Ireland generally, and breeding in every county, the Swift is of uncertain occurrence, at a distance from its nesting-places, unless insects are on the wing. Occasionally it ranges over lofty mountains and visits marine islands. If cold weather occurs after its arrival it suffers severely. In the Field of 29th May 1886 it is stated that in the previous week which was very cold two Swifts were found dead in New Ross and one of these had a piece of paper tied under its tail bearing the inscription. "Mary Elsam. Suakim. Egypt. 10-3-86."

The Swift appears in this country the last week in April or more usually at the commencement of May but it may commonly be seen about its chief breeding resorts like Dublin a week or more before it spreads to other districts.

Along the east coast Swifts are seen flying northwards in May (Migration Reports). The great majority leave in August, but stragglers sometimes occur in September and more rarely in October. I have seen one here on the 4th October with a great assemblage of Swallows preparing to migrate. In co. Armagh Mr. Jameson observed on the 2nd August fifty to seventy Swifts which were gliding with motionless wings unlike their mode of flight when feeding and were flying towards the south or south west at a great height. I observed Swifts about Cappagh during the first week in August 1895 moving day after day westwards, contrary to the direction one might expect.

The Swift can take flight from a perfectly level floor as I have proved.

The numbers of this species that breed in Dublin has been alluded to but Swifts are conspicuous by their abundance in many towns and nest under the eaves of workhouses in both ruined and modern castles under the arches of old bridges sometimes six to ten feet above the water. sometimes in the crown of the arch in company with Jackdaws and Starlings. More than one pair breed beside a public road here in the gable of a cow-house only twelve or fifteen feet above the ground. Others resort to sea-cliffs annually—for example the cliffs of Rathlin Island where the Swift nests abundantly (Saunders in *Zool.*, 1867. p. 621). The nests of House-Martins are sometimes appropriated by this species. Oak catkins and the scaly sheaths of pine-buds are used in building besides straws and feathers and the Rev. A. Ellison has found a nest consisting of a mere ring of materials, the eggs within it resting on the bare stone. He confirms my own experience that three eggs are found too frequently in the same nest to be the produce of more than one bird; indeed he thinks three are oftener laid than two. I have no record of a white or particoloured Swift.

THE ALPINE SWIFT. *Cypselus melba*, (Linnæus.)

Four Irish occurrences are on record. The last took place in 1866.

The first Alpine Swift claimed as a British-taken bird was shot at sea, off Cape Clear, some eight or ten miles from land, about midsummer 1829.

Another was sent in a fresh state to Mr. T. W. Warren on the 14th March 1833, and was said to have been killed at Rathfarnham, co. Dublin. It is now in our Science and Art Museum.

A third was shot near Doneraile, co. Cork, in June 1844 or 1845.

Thompson records the three foregoing specimens.

Mr. Howard Saunders mentioned (*Zool.*, 1866, p. 389) that, when he was in Belfast, in May 1866, Mr. Sheals, the taxidermist, showed him an Alpine Swift which had been picked up dead near Lough Neagh. This specimen was not offered him for sale. I cannot find that any writer has noticed it since.

Family CAPRIMULGIDÆ.

THE NIGHTJAR. *Caprimulgus europæus*. Linnæus.

Summer-visitor. Breeds in nearly every county, but scarce in Western Connaught and most inland parts of Ulster. More numerous in Munster.

Considering that this is a nocturnal bird which haunts unreclaimed uplands, and is seldom noticed, we have a great mass of evidence about it from all the provinces. It is probably most common in Munster, extending to Eastern Clare and to Kenmare and Caragh Lake in Kerry. It breeds on the mountains and waste lands of Leinster, though from Westmeath I have no notice of it, nor from Cavan in Ulster; Fermanagh with its mountains being the only inland county in the latter province from which I have many reports of it. It is found in Down, Antrim, and many parts of Donegal, these maritime counties being mountainous. It is also found through most of Connaught, chiefly in the eastern counties, while on the west coast and the adjacent vast moorlands it is decidedly rare; I know, however, of one sent from Clifden, and of another having been heard at Blacksod Bay. Most of the lighthouse observations come from the Tuskar, where six Nightjars were on the rock all day on the 11th May 1888 (Migration Reports). It is usually noticed early in May, but sometimes in the last week of April, at least in Waterford; It was observed in two parts of this county on the 24th April 1893, these being the earliest records I possess. We see the last of it in September, and it has been noticed as late as the 30th of that month, which is unusual.

The Night jar is called here in Irish "Toor-an-leen" (spinning-wheel), from its song, which may also be compared to gas bubbling through water. This is usually uttered after sunset, but I have heard it distinctly, though briefly, at 4 P.M. on a summer's day. It is sometimes commenced before the Night jar has alighted, and at other times it is concluded after the bird has taken wing, but it is usually produced on a solitary tree. I have seen the male descend in a spiral course from his perch, with his wings and tail out-spread to where the female was on the ground, and utter there a subdued churring. The song is recommenced before daylight.

When listening for Shearwaters on the Saltees, the late Mr. Seeböhm and I heard a Night jar strike up at 2 A.M. on the 24th May. The cry produced in flight is a clear "wheep," rendered by Mr. C. Dixon "co-ic," which seems to express exhilaration rather than fear; nevertheless it is used when the bird is flitting round the intruder and trying to decoy him from the eggs. The Bound uttered by the female on such occasions is a hollow, guttural cackle, resembling the Bound of walnut-shells being struck together.

The loud clap, made by smiting the wings together over the back, seems to me to be a freak of the male, as I have seen him perform it when gyrating round the female in a playful manner. I have known him after churring to take flight and clap his wings several times. In this act, which is always performed on the wing, "the bird slackens his pace and gives a kind of convulsive start or jump in the air, at the same time straightening the wings and striking the backs of them together very smartly over the back. He then resumes his place" (Bradshaw, in Dublin N.H. Soc. Proc.).

The antics of this bird on the wing are singular. Once, on my entering his haunt the male Night jar immediately flew past me uttering his "wheep," and sailed along with both wings uplifted and tail spread out awry. In this attitude he not only progressed for some distance with an undulatory movement, but wheeled round and went in another direction without flapping his wings. The bird will flutter over one's head, poising itself for a moment there, evincing a strange absence of fear; again, it will throw itself about in the air as if its wings were broken.

The Night jar loves low, scrubby woods on hill-sides, and heaths bordering plantations. In such places several may be heard churring at the same time; but the bird also frequents unreclaimed lands on the coast, e.g. the Saltee Islands, sand-hills on the Wicklow coast, and the Hill of Howth.

It uses the same spot year after year for laying. In 1882 a female was shot off her eggs, and in 1883 another laid within two yards of the same spot on an open mountain, while in 1886 this place was used again. An abrupt hollow is sometimes selected, the eggs being placed close under the side and sheltered in front by growing bracken fronds; but they are sometimes laid on a stony hump with hollows beside it, sometimes on a moss-grown boulder, and I have found them on a bare, flat stone, with nothing but a few dead stems that had fallen across it which, prevented them rolling off. Others have found the eggs laid on stones or on the trunk of a felled tree, two or three feet off the ground, No materials are ever brought by the bird.

The sitting Night jar resembles a rotten stick covered with lichens and scales of bark. I have seen her with neck outstretched and eyes open wide before she perceived me, but as soon as she saw me she retracted her head, throwing her beak up, and nearly closed her conspicuous eyes, the wings and feathers being tightly

compressed. This attitude of the head is customary with the Night jar for concealment when perched, and makes it look very unlike a bird. The nestling in down will throw back its head and close its eyes like the mother when alarmed, just as the little Stone-Curlew will adopt its parents' attitude of squatting, with its chin laid out flat on the ground.

The under-parts of the nestlings are much better covered with down than the upper, which protects them from the cold ground. They look like stumps of furze. The irregular markings of brown and grey on a white ground cause the eggs at a little distance to resemble rough quartz pebbles, or those lumps of whitish dung found about this bird's dozing-places. In very rare instances the eggs are zoned, and in others streaked. I have an abnormal pair, on each of which the colouring is almost confined to a large blotch, one of which resembles an Arabic monogram in blackish-brown. The rest of these eggs is pure white, but while fresh one was zoned with pale rose-colour, and the other had a large blotch of this colour, which occasionally tinges Night jar's eggs.

Family PICIDÆ.

Sub-Family IYNGINÆ.

THE WRYNECK.*

Ijynx torquilla, Linnæus.

Has been obtained in six cases on islands or near the coast; once in May, and five times in autumn.

The Wryneck's wanderings are shown by the fact that the species figures four times in the Migration Reports, having occurred on the autumn migration at such isolated spots as the Fastnet, the Arran Islands, Rathlin O'Bime and Rockabill, while in the remaining two cases it was shot not far from the coasts of Waterford and Wicklow.

The Wicklow instance is the only case where it occurred in May, among woodlands. While the Lesser Spotted Woodpecker has not been obtained for over half a century, these Wrynecks have all been taken since 1877.

The first was shot near Dunmore, co. Waterford on 5th October 1877, by Mr. Ernest Jacob, who presented it to the Science and Art Museum. The second was shot on Rathlin O'Birne Island, Donegal, in or about October 1878, and stuffed there, though it subsequently went to loss; but Mr. Tottenham, light-keeper, who informed Mr. Barrington about it in 1892, was able to identify it from the next specimen which he saw, taken in 1886. The third, a male was killed striking the lantern of Aran Island North lighthouse at 2.30 a.m., on 6th October 1886. It was very fat, and is now in Mr. Barrington's collection.

The fourth was shot on a tree in Ballycurry demesne, co. Wicklow, on the 29th May 1895, and is in the possession of the proprietor, Colonel Tottenham. A fifth was killed against Rockabill lighthouse, co. Dublin, on 8th September 1896, and preserved for Mr. Barrington; it was an adult in beautiful plumage. The sixth, a male, was found dead on the Fastnet Rock off Cape Clear on the 17th September 1998, and was sent to Mr. Barrington in the flesh.

Besides the above Mr. Kane believes that he saw one climbing up a tree at Markree, co. Sligo, in September 1886.

THE GREEN WOODPECKER. *Gecinus viridis*, (Linnæus)

Has been obtained in three instances.

Thompson mentions a Green Woodpecker which was taken at Kilshrewley near Granard, co. Longford, but was not preserved.

Watters had in his collection an adult male which was obtained at Sallymount, co. Kildare, on 27th September 1847.

*The Irish Naturalist for 1896, p.16, contains details of the first five occurrences by Miss Gyles, now Mrs. Barrington.

A third was exhibited before the Dublin University Zoological Association by Dr. Ball, on 21st January 1854, having been forwarded to him by Mr. Thomas Ball of Ruthmullen, co. Donegal.*

THE GREAT SPOTTED WOODPECKER. *Dendrocopus major*,
(Linnæus.)

Rare casual visitor, October to February, chiefly in the last quarter of the year, and on the eastern side of Ireland. The most frequent of the Woodpeckers.

Neither this nor any other Woodpecker has been known to breed in Ireland, but of the visits of the present species in autumn and winter we have some thirty-nine instances, which have occurred in widely separated districts from Kerry up the eastern side of Ireland to Londonderry. We know of but three examples in Connaught (two in Sligo and one in Mayo), which, with the further exception of one shot at Glencar in Kerry, furnish our only records from the west of Ireland - indeed, most of the western counties of Munster, Leinster and Ulster are blank. Down seems to have been more favoured by this Woodpecker's visits than any other county. In certain seasons several have been taken in various parts of the country. Thus for the last quarter of 1845 we have four notices; for the winter of 1849-50 three; for that of 1886-7 four; and for the three last months of 1889 eight; five of these being from Eastern Ulster, while the other three occurred in Cork, Kildare and Meath. A ninth bird was shot on the 12th January 1890, in Kerry, as stated. Thus the flight spread itself that winter from the northern to the southern limits of Ireland.

This fact has been erroneously quoted with reference to the Green Woodpecker. Several of the birds shot in 1889 were in a poor state of plumage.

Thompson records one taken in Londonderry in August 1802, on the authority of Templeton, but as we have no other summer occurrence on record we may treat that ancient case with reserve. The instances given for other months are:-October, 6; November, 8; December, 5; January, 2; February, 4.

The numbers killed in the several

counties have been:-Kerry, 1; Cork, 2; Waterford, 1; Tipperary, 1; Kilkenny, 1; Carlow, 1; Wexford, 1; Wicklow, 2; Kildare, 1; Queen's Co., 1; Dublin, 2; Meath, 1; Louth, 1; Sligo, 2; Mayo, 1; Monaghan, 1; Armagh, 1; Down, 9; Antrim, 3; Londonderry, 1.

In one case two and in another three individuals were met with.

*Some recent works on Natural History (Swan and Aflalo) have spoken erroneously of an immigration of Green Woodpeckers into Ireland in 1889, The species referred to should have been the Great Spotted Woodpecker.

THE LESSER SPOTTED WOODPECKER.

Dendrocopus minor, (Linnæus.)

Very rare visitor. Since the six or seven instances mentioned by Thompson, we have but one doubtful record in 1857, none more recently.

We find in Thompson's Appendix :- "Mr. Glennon of Dublin (taxidermist) states that in the course of many years he has preserved at least six or seven of these birds, sent to him from various parts of Ireland." Of these Watters examined two, an immature female shot in the co. Wicklow in the autumn of 1847, and an adult male, obtained in the same county on the 21st September 1848. It is not known what became of these specimens, and none have been obtained since; but Mr. E. G. Bulger has stated (*Zool.*, p. 5680 [1857]) that on the 14th April 1857 he observed a Lesser Spotted Woodpecker on a beech-tree about two miles from Fermoy, in the co. Cork.*

In his Natural History of the county of Dublin, 1772, Ruddy mentions without comment "*Picus varius minor*, the Lesser Spotted Woodpecker;" and Watters argues, merely from this mention of the species, that it was once indigenous to Ireland when the country abounded in forest. We shall do well to await further proof as to the avifauna of those times.

Family ALCENININÆ

THE KINGFISHER. *Alcedo ispida*, Linnæus.

Resident. Breeds, or has bred, in every county, though scarce and local.

The Kingfisher is so shy a bird, and frequents such secluded places, that few are aware how widespread it is in Ireland. Careful inquiry shows, however, that no county in Ireland can be excluded from its breeding-range. In most of them it is a very scarce bird, but in some which afford suitable streams with alluvial banks it is more frequent. I may name Limerick, Antrim, and Armagh. On a river in the latter county a boy is said to have taken twenty-one clutches the same season; some of them doubtless second layings. When the breeding-season is over the

*Admitting that the above was a Spotted Woodpecker, there is nothing to show that the observer may not have mistaken one of the larger species for the lesser.

For Belted Kingfisher, see Appendix.

Kingfisher wanders very much, especially in frosts, when it betakes itself to tidal estuaries, and is then commonly shot, not only for salmon flies, but more frequently from the mere idle love of bagging so beautiful a bird. This wanton habit keeps the species scarce and shy. It seldom wanders far from land, if we may judge by the very few instances in which it has been noticed at the island rocks and light-ships (Migration Reports).

A habit of the Kingfisher when waiting for its prey has thus been described by Mr. Bradshaw of Bansha, who used sometimes to watch it at a distance of only two yards: "When sitting on a branch watching for fish it has its head drawn back upon its shoulders, but every five or six seconds, with the most perfect agility, the Kingfisher projects its head forward, alternately giving it half a turn to each side, and letting it fall back on its shoulders after each movement. The creature has a most grotesque appearance, the long bill and large head looking too heavy for the almost tailless body, and seeming to require rest after the exertion of looking about. The real use may have been that the bird has a habit of using each eye alternately to examine the water."

In those few instances where the dates have come to my knowledge the Kingfisher did not lay until May, but it will at times lay a second clutch in the season. Mr. Cameron took five fresh eggs from the bank of the Blackwater on the 5th July, out of the same hole from which a young brood had flown about a month previously.

Family CORACIIDÆ.

THE ROLLER. *Coracias garrulus*. Linnæus.

Rare and accidental visitor, to all the provinces, on the autumn migration.

We have ten instances of the occurrence of the Roller in Ireland at widely separated dates and places, and of these we only have information when six of them occurred, two in September and four in October. The three cases quoted by Thompson are not regarded by him as unquestionable, not having "come under the inspection of the naturalist," In some cases the stomach was filled with small coleoptera or other insects.

South of Ireland. - One (?), years before 1849 (Thompson).

Cork. - One near Dumanway, formerly in the collection of Dr Harvey (More's List. *vide* Warren): a male, immature, near Skibbereen, 29th October 1884 (More's List).

Wexford. - Male adult, Courtown 6th October 1849 (Thompson, II, 8, Watters) in Science and Art Museum.

Kildare. - One seen (?) Carton, September 1831 (Ball in Thompson).

Clare. - One near Riverstown about 1855, in collection of Col. Paterson, Corrofin.

Leitrim. - Female, Corry on Lough Allen, October 1876 (Williams in *Zool.*), in Mr. Neligan's collection.

Sligo. - One (?) years before 1849 (Thompson).

Antrim. - One, Randalstown 29th September 1891 (Paterson in *Zool.*).

Donegal. - Burt Slob Level, Lough Swilly, 10th October 1891 (Paterson in *Zool.*).

Family MEROPIDÆ.

THE BEE-EATER. *Merops apiaster*, Linnæus.

Rare and accidental visitor, on some eight occasions, usually in spring, but once in November.

The Bee-eater has visited, at wide intervals, various parts of Ireland, chiefly the maritime counties of the south and east. On two occasions small flocks were met with; the first of these being near Whitegate on Queenstown Harbour, where seven were seen; and in another instance, a flock of six were found resting on a Snipe bog in co. Wicklow, on the unusual date of the 2nd November. One of them, a female, a bird of the year, was shot; its stomach contained flies of three species and a few beetles.

Cork. - Seven seen; three shot near Whitegate, end of April or 1st May 1888. Two of these were purchased for the Science and Art Museum, Dublin.

Wexford. - One shot on the coast in the winter of 1820 (Thompson); one procured summer 1848 (Watters).

Inland Counties. - One or more mentioned by Dr. Graves before

Wicklow. - One some years before 1829 (Thompson); six seen, one shot, on a bog some distance from Delgany, 2nd November 1892 (Williams in *Zool.*).

Dublin. - A male at Balbriggan, 2nd May 1889 (Williams in *Zool.*)

Donegal. - One shot By the late Mr. Stewart, Rock Hill, about 1830 or 1831 (Sinclair).

1830.(Thompson).

Family UPUPIDÆ.

THE HOOPOE. *Upupa epops*, Linnæus.

Irregular spring and autumn-visitor. Found in most cases near the coasts, chiefly the coasts of Wexford, Waterford and Cork.

Though a decidedly uncommon bird the Hoopoe appears to visit Ireland most years, either on the spring or the autumn migration, and sometimes occurs six or seven years in succession. In certain seasons e.g. 1888 and 1894, Hoopoes have been taken at widely separated places, suggesting a simultaneous movement. Out of one hundred and seventeen instances I find that seventy-six, or nearly two-thirds, occurred along the south coast between Wexford and Cape Clear. The valleys leading from the principal bays, and the promontory called the Old Head of Kinsale, have been many times visited. Other Hoopoes have been met with on almost all the other parts of the Irish coast or counties adjoining the same, also on several of the island rocks, such as the Blaskets, the islands of Mayo, Inishtrahull off Donegal, and the Tuskar. Some light-ships, too, have been visited (Migration Reports). Very few specimens have occurred in inland counties, least of all in those of the northern half of the island.

The spring migration must be very early, several Hoopoes having been taken in February, while March yields the longest list of any month. The records diminish for April and May, and then almost cease until September and October, at which time of year the species has often occurred. There are instances of its having remained through the winter, and to this we should probably attribute the December and January cases. In spring, also, Hoopoes have been known to frequent the same locality for weeks together, sometimes in pairs, but no instance of their attempting to nest in Ireland is known. If they were not so usually shot we might have better chance of adding this beautiful species to the list of those that have bred in this country.

When two Hoopoes occurred together they are treated as one instance in the following tables:-

Kerry.....4	Kilkenny.....3	Galway.....2	Fermanagh.....1
Cork.....34	Wexford.....23	Roscommon.....1	Donegal.....2
Waterford....19	Wicklow..... 2	Mayo.....3	Londonderry.....3
Clare.....2	Dublin.....2	Sligo.....2	Antrim.....3
Limerick.....1	Queen's Co.....1		Down.....5
Tipperary.....1	King's Co.....1		Armagh.....1
	Westmeath..... 1		

Munster	61	Leinster	33	Connaught	8	Ulster	15
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Total for all Ireland, 117, of which the month of capture was only recorded in 70 cases.

January..... 2 April.....9 July.....1 October.....11
February..... 6* May.....7 August.....-- November.....--
March.....19 June.....1 September....12 December.....2

*Of the February instances one took place on the Cork coast in 1862, another occurred in the same year in the co. Kilkenny. Thompson gives the remaining four, the word "Feb." in the first case being repeated in the following three cases by double commas. These, unless introduced in error, complete the six February occurrences.

Family CUCULIDÆ

THE CUCKOO. *Cuculus canorus*, Linnæus.

Summer-visitor. One of our most widely-distributed birds. Breeds in every county.

The Cuckoo is to be generally found, not only in the cultivated and planted districts, but in the bare mountain sides and in the wilderness of the extreme west. It is a noticeable bird in Connemara and on the Arran Islands, in Achill, Western Donegal (including Aranmore) and Rathlin Island, where it breeds. While crossing the vast moor of Western Mayo, however, I did not see the Cuckoo. It occasionally visits the remoter rocks, the Skelligs, Tearaght, Tory Island and Inishtrahull, though it does not remain on them. It occurs during migration at the Wexford light-ships and the Tuskar.

The ordinary time of its arrival is from the 16th to the 30th of April, but it has frequently been noticed in the first half of that month, from the 2nd onwards. In Tyrone and in the Ballina district it is often not noticed until the first week in May. Instances have been repeatedly announced in the newspapers of its occurrence in March or even earlier, and several people are convinced that they have heard or seen it before April. No specimen, however, has been produced in the flesh at that early season, and until this can be done naturalists will continue to regard these reports as mistakes. The young have repeatedly been noticed as late as September, and one was killed at the Tuskar on 2nd November 1853 (Migration Reports).

In the bare moorlands of the west and on the Arran Islands Cuckoos assemble after dark wherever a few trees or bushes afford shelter; often round a house, the occupants of which they disturb all night by the babbling notes which are attributed to the female. By day they roam over the wilds, and are conspicuous, perching on walls and rocks, and flying across land and water.

Though the Cuckoo's note is heard here daily in May and June very few of its eggs have ever been brought to me, but I can give instances of their being found in the nests of the Willow-Wren, Corn-Bunting and Meadow-Pipit. A Cuckoo's egg which showed but the first trace of incubation was found here in a Meadow-Pipit's nest, which contained one hard-set egg of the latter and two young Pipits just hatched. Thompson gives an instance

For yellow-billed Cuckoo, Black-billed Cuckoo, see, Appendix.

(Vol. III. 442), the earliest recorded in our islands, in which Kinahan shot a Cuckoo with its egg in its throat. I have no new facts to add to the voluminous literature that has illustrated the breeding-habits of this bird.

THE GREAT SPOTTED CUCKOO. *Coccyzus glandarius*, (Linnæus.)

Has twice occurred on islands off the west coast.

The first example of this southern species was taken on the island of Omey (not "Omagh" as it has been spelt), off the west coast of Connemara, having been pursued to the shelter of a wall by Hawks. It appeared to be weak from fatigue. It was announced in 1843 by Ball, who obtained it for the Trinity College Museum. Mr. Howard Saunders, who examined it in 1878, found that, from its chestnut coloured primaries, it was a bird of less than a year old. Some uncertainty surrounded the date of its capture, but Thompson assigned it to March

1842. In the last edition of More's List, 1890, this specimen is stated to be still preserved in Trinity College, but in 1896 I failed to find it there.

Mr. Barrington received from Mr. T. King, lightkeeper on the Great Skellig, co. Kerry, a very detailed description of a bird he had examined with a telescope upon that rock on 30th April 1897, and although it was not obtained, the particulars of form and plumage given are so full that they can apply to no other species and indicate, as Mr. Saunders remarks, that the specimen was in nearly adult plumage. When first seen it was coming from south-west direction and appeared tired, for it repeatedly permitted itself to be approached within twenty yards (Barrington in *Zoologist*, 1897, p. 574).

Order STRIGES.

Family STRIGIDÆ.

THE BARN-OWL. *Strix flammea*, Linnæus.

Resident and widely distributed, breeding in every county.

Though nowhere numerous the Barn-Owl is to be met with in every district in Ireland, being decidedly common in the counties of Leinster, and the county Tipperary in Munster. It is certainly more frequent about the vicinity of towns than in lonely country districts, of which fact the suburbs of Dublin afford a striking example. It preys almost exclusively on rats and mice, and seems to be a sort of follower of the human race. In this it is unlike the Long-eared Owl, which loves wooded solitudes.

Owing to the increase of the latter species we can no longer agree with Thompson, who considered that the numbers of *Strix flammea* prevailed in his time.

This bird establishes itself even in remote islands, as Rathlin and the Arran Islands. It has been found asleep in rock-fissures at Malin Head and Mine Head.

In Ireland, as well as in England, the eggs are not laid until the latter part of April or the month of May. I have known a hollow tree to be used by Barn-Owls, but a chimney, a pigeon-hole, a roof or a ruin offer themselves more frequently in this country as breeding-places.

The Barn-Owl is the most useful of all wild birds to man, on account of the vast numbers of mice which it destroys; nevertheless its slaughter in Ireland seems to be not only common but increasing. This does not arise so much from the efforts of the gamekeeper to destroy everything with talons, as from the mere impulse to kill a strange looking bird; and in some of our towns a set-up specimen is so common in houses as to be apparently considered a conventional ornament.

THE LONG-EARED OWL. *Asio otus*, (Linnæus.)

Resident and widely distributed. Breeds in every county in Ireland.

This is our commonest Owl, the extension of planting having doubtless led to its increase. It is probably absent only from districts which are destitute of trees like the western sea-board; but where there are trees (as at Ballynahinch) it is found even in Connemara.

It seems equally common in summer and winter, and there is little evidence of seasonal migration in Ireland, but one was taken on Rathlin Island, and another, on the 13th November 1847, at the Tuskar (Barrington).

It breeds early. I have seen a young one with feathers showing through its down on the 31st of March, and Mr. Warren speaks of broods leaving the nest the first week in April, though more usually the young are not hatched until April. The Long-eared Owl uses the old nest of another bird, generally that of a Magpie, though sometimes that of a Rook or Heron. From three to six eggs are laid, commonly four or five, six being exceptional.

The seasonal call of the male may be heard as early as December. At night, from the depths of a dark, lonely wood this moaning call sounds most unearthly, the long-drawn "oo, oo, oo," is exactly like dying moans (Warren). The warning-note resembles the word "quack" repeated from three to five times, and is usually uttered by the female when an intruder approaches her young, whose mewling call for food is at the same time discontinued. According to Mr. Warren, the young commence on dark days to call at noon, and they continue

until next morning. For weeks after leaving the nest they keep up this piercing " mew," seated on a tree, while the parents range in search of prey.

The Long-eared Owl has repeatedly been observed to catch bats, and has been seen hunting for them over the surface of a pond; but it also preys on beetles, rats, mice, pigmy shrews and small birds. The Rev. C. Irvine, however, states that one killed a pigeon close to his vicarage. It may be seen flying along the canals in the outskirts of Dublin in quest of prey (Moffat).

THE SHORT-EARED OWL. *Asio accipitrinus*, (Pallas.)

Winter-visitor in varying numbers, and of irregular distribution. It is not known to have bred in Ireland.

This species usually arrives in October and departs in February, but 205 birds of which I have records occurred in the following order:- August 2, September 11, October 38, November 49, December 49, January 33, February 16, March 5, April 2. Thompson's earliest record is 5th September, and his latest 3rd April.

The Short-eared Owl appears to occur irregularly, for in some seasons Messrs. Williams and Son have received for preservation two or three specimens only; while during others from twenty to thirty have passed through their hands. The same thing has been observed in Belfast, where Messrs. Darragh and Sheals received twenty-six or more during the winter of 1883-4. A corresponding increase was observed at the same time in Dublin.

This species seems to be most common in the county of Dublin, and the adjoining counties of Louth, Kildare and Wicklow, but it is not uncommon in districts about Belfast. The same may be said of the county of Wexford, where Thompson was informed numbers had occurred on the mountains of Forth, and where Mr. G. H. Kinahan has found the species very common in its season. Mr. Higginbotham, a light-keeper who has been on the Tuskar, told me that after a night when many migrating birds had been observed he used to see an Owl on the rock next day.

These facts we might expect, as the counties above-named lie nearest to Great Britain, the immediate source of migration; but it is more remarkable that so many of this species should occur ill the extreme west. Out of 169 of which I have noted the localities throughout Ireland, 35 occurred in the counties of Kerry, Galway and Mayo. In Thompson's time, too, this bird was well known in Kerry, as many as thirteen having been reported as seen together. Mr. Warren states, with reference to Mayo and Sligo, that the Short-eared Owl is sometimes met with in small flocks by Snipe-shooters. Possibly the extensive moors in these western counties may offer attractions which cultivated counties do not.

Harvey (1845) spoke of this Owl as not rare in the county of Cork, a statement more recently repeated to me by Mr. Rohu, who has preserved specimens there. In Waterford, Tipperary, and in several of the inland counties, it is an uncommon bird.

Mr. H. Blake Knox: states that old males are often cream-coloured instead of tawny.

THE SNOWY OWL. *Nyctea scandiaca*, (Linnæus.)

A rare and uncertain winter-visitor.

We have records of the occurrence of some thirty individuals. The available dates of these range from November to March, except in one case which took place in April. Thompson mentions five of them, which all occurred in the spring of 1835 in Mayo, Longford, Tyrone, and Antrim. Ten have occurred in Mayo at different times.

Cork. - One fired at, on Inchigeela Mountain in 1827 (Thompson). **Tipperary.** - Kinahan noted two

seen on a bog at Annagh Inch 26th December 1853 (*Nat. History Review*, Vol. I. p. 22).

Wexford. - One shot on the south coast in 1812 (Thompson).

Dublin. - A female obtained alive at Swords early in 1862 (Kinahan in Proc. D.N.H. Soc.); one seen on the North Bull winter 1880-1 (E. Williams in letter, 2nd September 1881).

Longford. - One received by a Dublin bird-preserved 5th April 1835 (Thompson).

Roocommon. - One preserved for Mr. Jones of Roscommon (E. Williams in above letter).

Leitrim. – One shot about 1873 or earlier at Larkfield, where it is still preserved.

Mayo. - One shot in March 1835, seen by Thompson; one obtained near Ballinrobe winter of 1839 (Zool., 1861, p. 7416) j one reported by Montgomery killed in 1850 (Proc. D.N.H. Soc., 7th March 1862); one shot at Summerhill near Killala 26th January 1856 (Warren) one taken alive near Ballycroy late in the autumn of 1859 (Proc. D.N.H. Soc., 4th January 1861); one seen at Summerhill November 1860 (Warren); a female shot at Dovein 18th March 1871 (Ash by in Field, 8th April 1871); one shot near Belmullet in 1888 (More's List); a female in first year's plumage shot by Captain Harvey at Keel, Achill, 6th December 1892 (Irish Nat., 1893, p. 25) one shot near Belmullet 13th December 1893 (Irish Nat., 1894, p. 24).

Fermanagh. - One seen on mountains near Lack in February 1876 by Mr. H. B. Murray, who showed me one of its feathers which he had picked up.

Tyrone. - One shot near Omagh about 1835 (Thompson).

Donegal. - One shot near Killybegs November or December 1837 (Thompson); two seen, apparently in successive seasons, by Rev. A. H. Delap near Templecrone Rectory, between 1870 and 1872; one shot on Inishtrahull

19th November 1882 by Mr. W. H. James, who presented it to the Science and Art Museum, Dublin.

Londonderry. - A male noted by Darragh as shot near Limavady about 3rd December 1862.

Antrim. - An immature bird shot about 26th March 1835 near Portglenone (Thompson); a similar bird seen at Bruslee about twenty miles south-east of Portglenone on 21st of same month (Thompson).

Down. - A male, described by Thompson, shot on Scrabo Mountain 2nd December 1837, still in Belfast Museum; another male shot at Dundrum 18th January 1889 (More's List).

Armagh. - One shot near Lurgan on 22nd February 1850 and sent to Trinity College Museum (Thompson, III. p. 435).

A specimen captured in Ireland in December 1876 was presented to the Zoological Society of London (Zool., 1877, p. 63).

A male Snowy Owl alighted on a vessel during a snow-storm in November 1878, about threehundred miles south-west of Cape Clear, and was brought to Mr. Rohu of Cork for preservation. This occurrence, coupled with Thompson's mention of a remarkable flock of Snowy Owls which fell in with a vessel two hundred and fifty miles from Labrador, suggests that some at least of our Irish-killed specimens reach us from Northern America.

THE SCOPS-OWL.

Scops giu, (Scopoli.)

Has occurred at least seven times in Ireland, chiefly in spring and summer.

Thompson refers to the Proceedings of the Zoological Society, 1837, p. 54, for the first record of a Scops-Owl in Ireland, which was shot in July a few years previously at Loughcrew, co. Meath.

The second, recorded by Poole in the Zoologist (p. 2019 [1848]), is mentioned by Thompson as having been killed in April 1847 near Kilmore, co. Wexford. In June 1852 (Proc. D.N.H. Soc, p. 91)

* Not mentioned by Watters 1853, nor by More. Possibly the latter omitted it, fearing some mistake from the change of locality.

in the company of Montgomery in 1878, noted it then as from Wexford. We may infer, therefore, that Montgomery sanctioned the change.

On 4th March 1854 (Proc. Dublin Univ. Zool. Assn.) Dr. E. P. Wright announced another Scops-Owl, the property of T. W. Warren, shot at Hillsborough, co. Down, about March 1853. This is in the Dublin Museum.

On 17th November 1883 one was caught alive at Belfast, and is now in the collection of Mr. H.

Montgomery exhibited a third,* which he stated was given him as killed in the co, Clare. The specimen from Montgomery's collection (which belongs to the Dublin Museum but is now lent to the Waterford Museum) is labeled "Wexford," and Mr. Howard Saunders, who visited the Dublin collection

Blake Knox. Before its capture it was seen flying about for some days.

On 31st May 1889 another, accompanied by a similar bird, was obtained at Foulks Mills, co. Wexford, and presented to the Dublin Museum by Mr. F. R. Leigh.

On or about the 20th May 1899 a Scops-Owl was captured, after having been winged, at Glendalough House in Connemara, and is kept in confinement there by Mr. A. V. Wilcox.

There have been other cases in which small, eared Owls, possibly of this species, were obtained

in Ireland, but the specimens are not now forthcoming.

Order ACCIPITRES.

Family VULTURIDÆ

THE GRIFFON-VULTURE. *Gyps fulvus*, (J. F. Gmelin.)

Has once been obtained in Ireland.

The particulars of this occurrence are given by Yarrell, who was informed by Admiral Bowles that in the autumn of 1843, when visiting Lord Shannon at Castle Martyr, he saw a Vulture. It had been caught by a youth on the rocks near Cork Harbour in the spring of that year. The bird was full-grown and the plumage was perfect. It was very wild and savage, and being in perfect health was kept in confinement for a while, but on its death the late Dr. Ball obtained it from Lord Shannon for the Museum of Trinity College, Dublin, where it is now preserved (Yarrell's "British Birds," 4th Ed., Vol. I. p. 2).

Mr. Howard Saunders, who examined this specimen in Dublin in 1878, and again in 1898, has no hesitation in saying that it is immature ("Manual of British Birds," 2nd Ed., p. 311).

Family FALCONIDÆ.

THE MARSH-HARRIER. *Circus aeruginosus*, (Linnaeus.)

Still resident in a few midland and western localities; formerly widespread.

Thompson stated that in his time the Marsh-Harrier was found in suitable localities over the island, and among the counties in which it bred he mentions Kerry, Cork, Tipperary, Monaghan, Tyrone, Down, Antrim and Londonderry.

Watters, writing in 1853, speaks of it as the most abundant of our larger birds of prey, and widely distributed. Since then it has been exterminated in most of its former haunts, its low, easy flight making it an irresistible mark to the wanton shooter, as well as to the gamekeeper. It still maintains a precarious existence on the midland bogs and in parts of Galway, and is preserved on one estate in Queen's County. It strays from its breeding-haunts in August, and wanders during the autumn into other parts of the country to lakes and rivers where water-birds are plentiful; and it is then that it is most frequently shot.

Cork.- Besides the Youghal district mentioned by Thompson, the Marsh-Harrier bred near Ballycottin, where Mr. Corbet observed it down to about 1870. One frequented Castle Martyr during the winter of 1879-80, feeding on Water-hens. The species has been occasionally seen west of Bandon in winter by Mr. Longfield.

Waterford has no extensive marshes, but an old gamekeeper of the Marquis of Waterford told me he had formerly seen "Kites" with white heads. Major Hely states that this bird formerly bred on the great bogs between **Tipperary** and **Kilkenny**, and that it is still seen occasionally in winter, a statement that Mr. Purefoy repeats concerning Western

Tipperary. In the north of that county Mr. G. H. Kinahan used to see both young and old birds frequenting the Brosna Valley in September, perching on the hay-cocks, especially when the fog lay on the low lands.

Queen's County.-The great bogs of the central plain are its chief resort. In April 1893 I saw three Marsh-Harriers soaring in circles at a considerable height over the extensive marshes of Lord Castletown at Granston. They are seen there all the year round, and Lord Castletown, who preserves them, informed me in 1896 that he believed there were then eight pairs in different parts of his estates, and that he had seen five birds on the wing at once. This is a pleasant contrast to the monotonous tale of extermination from other places. On the great tracts of bog in North Queen's County, **King's County** and **West Meath**, where the Marsh-Harrier has habitually bred, it is found in diminishing numbers. Lough Iron in West Meath, which abounds in wild fowl, has been always a favourite resort of this bird between August and October, and a long series of specimens have been shot there, as well as near Edenderry.

Galway has always been a great stronghold of this Harrier. On two occasions in June 1897 I met with it on the bogs at each side of a great lake, where it is stated to breed still. Mr. Young tells me he has observed it regularly when shooting in Western Connemara, and its nests have been found among lakes south of Recess. Along the Shannon Valley it appears to be now only a wanderer: It will beat along the river until it drives out a Coot. The latter seeks to escape by diving, but the Harrier pursues it each time it comes to the surface until the Coot is drowned or taken.

Mayo. – The Marsh-Harrier appears to have bred on Lough Mask, and used to be seen about Cong up to 1859. In Western **Sligo**, as Mr. Warren states, it has been occasionally seen, but not of late years. One was shot by Colonel Wood Martin in 1889. It was accompanied by another.

Leitrim. – Mr. Macpherson, game-keeper, has usually seen the Marsh-Harrier in August on the Shannon near Dromod. He sent two for preservation to Mr. Sheals in August 1884. It visits Lough Rynn in winter.

Fermanagh.—The Rev. C. Irvine writes:— "Previous to 1840 this bird was a constant frequenter of

Lough Erne. It abounded there, and its nests were found on the waste and scraggy places adjoining the lake, built on the ground. But about 1840 the gamekeepers destroyed them all by poison." Since then Mr. Irvine noticed the Marsh-Harrier once in 1852, and once in 1872.

Donegal.— Mr. William Sinclair states that it used to breed in small numbers in Donegal, but that he had not seen one there since about 1870. The late Sir Victor Brooke, in 1890, mentioned a former breeding-haunt in the south of Donegal.

The "Belfast Guide," 1874, speaks of this species as not very uncommon on the moors; but it seems, now to have disappeared from Ulster except as a straggler. In the latter character it has been met with in several other counties besides the above—*e.g.* in **Clare**, at Oak Park in **Carlow**, in different parts of **Kildare**, at Lough Broad in **Wicklow**, and there is a notice in Ruddy's work (1772) that it had been shot in the **Co. Dublin**.

There is a pied example from the co. Kildare in the collection of Mr. Barrington, and another particoloured bird at Brittas, Queen's Co. which was shot on Lough Iron.

THE HEN-HARRIER. *Circus cyaneus*, (Linnæus.)

Still resident, but decreasing in numbers, in many mountainous districts. Appears to have ceased to breed in other localities where it used formerly to do so. It is to be met with in winter as well as in summer.

Kerry is one of its chief strongholds. It breeds on the mountains, both north and south of Dingle Bay, and on the Muckross estate near Killarney.

Cork.— Frequently seen on the mountains south of the Mallow and Killarney line. A straggler to other parts of the county.

Waterford. —Probably still resident on the Knockmealdown Mountains, where on 26th May 1882 I found a nest with six eggs on a steep slope surmounting the escarpment of a lonely ravine, and was entirely composed of heather among tall plants of which it was placed. It formerly bred on the Comeraghs (Davis in Thompson) I see Hen-Harriers occasionally, chiefly wanderers in winter.

Limerick.—Not uncommon or Slievefelim.

Tipperary.—Resident on the Keeper Mountain, and not uncommon on the hills north of Cappawhite.

Wicklow.—I cannot say that it is more than a straggler now to this county, though in the time of Watters (1853) it bred on the Wicklow Mountains; again, in 1871, Mr. Blake Knox stated that it bred there.

Dublin.— Still Occurs on the mountains adjoining Wicklow. In 1852 Kinahan recorded it as a winter visitor to Donnybrook near Dublin.

King's and Queen's Counties.— the Slieve Bloom Range has been the chief home of this species in Central Ireland. On 12th June 1884, in these Queen's Co. mountains, a male and female were shot at their nest, which contained four young and an addled egg.

Galway. —The western portion of this county, Connemara, is one of the chief homes of this bird. It breeds on the mountain heaths, and on islands in the bog lakes.

Mayo.—The Hen-Harrier seems to be little known. Mr. Warren mentions but one occurrence in his district.

Fermanagh.—Bred in the mountains near Lack in the fifties. Still occasionally met with there, but rare.

Donegal.—The same remarks apply to the mountains near Lough Derg north of Pettigoe. In Inishowen it used to be common in the sixties, and a pair are believed to have nested on Lord

Leitrim's estate in 1893. In the rest of Donegal it appears to be a rare bird.

Londonderry.-It bred on the mountains adjoining co. Tyrone in Thompson's time.

Antrim. -Still resident on the mountains in the north of the county.

Down.-Scarce, but Mr. Kane, gamekeeper, knew of a nest on the mountains near Rostrevor in the nineties. In other counties this species is met with as a wanderer when not breeding, and in such cases it is found on moors and flat bogs, as well as on mountains.

MONTAGU'S HARRIER.

Circus cineraceus, (Montagu.)

Rare casual visitor, eight haying occurred on seven occasions from May to October, and in every case in or near the county of Wicklow.*

The first, a female, was shot near Bray, on the 1st October 1848 (Thompson, I., p.427). This specimen has perished.

A second, supposed to have been a female from its plumage, was shot at the Scalp, co. Wicklow, on the 1st October 1849, and was procured for Trinity College Museum (Thompson, II., p. viii). This, too, has disappeared.

An immature bird, with breast of a rich buff-colour, was shot on 1st September 1874 by Major Barton, near Enniskerry, not far from the two previous localities. Its stomach contained grasshoppers and beetles (Field, 26th September 1874).

An adult male was shot on the Wexford side of Croghan Kinsella Mountain, borders of Wicklow,

*The statement made in the Zoologist and Irish Naturalist for 1897, that Montagu's Harrier had bred in Kerry, has been corrected in both those publications in 1898.

on the 14th May 1890, and is in the Science and Art Museum, Dublin. Its stomach contained remains of a Sky-Lark (*Zool.*, 1890. p. 275).

A male, in the second year's plumage, was shot at Glenasmole, co. Dublin, borders of Wicklow, on 3rd July 1893, and was preserved by Williams & Son for Mr. Talbot Power (Irish Naturalist, 1893, p. 253);

A female, in the Science and Art Museum, was obtained from Messrs. Williams & Son, who inform me that it was shot near Arklow on the 21st August 1898.

Two soft immature birds, male and female, were killed on 13th and 14th August 1899, near Ballynastragh in North Wexford (Mr. E. Williams).

THE COMMON BUZZARD.

Buteo vulgaris, Leach.

Now only a casual visitor in autumn, winter and spring. Very rare in Connaught and Kerry.

In Thompson's time this fine bird was a resident in Ulster, and he gives us valuable particulars of its breeding in the four maritime counties of Donegal, Londonderry, Antrim and Down, both on inland cliffs and in trees of wooded demesnes. These details, beginning with 1832, were published in 1849. Mr. J. V. Stewart had spoken of the Buzzard in 1832 as common and resident.

In 1852 Mr. R. J. Montgomery noticed the increasing scarcity of the Buzzard, and stated that though he had looked for it in its former haunts he had only seen two instances within the previous five years.

Watters (1853) speaks of it as chiefly confined to the north of Ireland, and states that the very few which Mr. Glennon had received for preservation had come from northern counties.

Mr. H. C. Hart stated in 1894 that for the past twenty years he had noticed in Donegal the ever-increasing scarcity of the Buzzard; but it probably bred until 1883, in the July of which year he saw five on the wing together, at the south end of the Mourne Mountains, besides several in Donegal.

Mr. Campbell, on visiting Magilligan in Londonderry, in 1891, where Thompson found this species breeding, was informed by two farmers residing there at the foot of the cliffs that they remembered the Buzzards well until about five or six years previously, when gamekeepers had shot them. All the notices we have of this bird in summer relate to the north of Ireland, previous to its extirpation as a breeding-species. Mr. Montgomery in North Antrim speaks of it as not having been seen since about 1885. It is now probably a mere straggler from Great Britain, appearing occasionally in October, and through winter and spring. It is rarest in the west of Ireland.

Cork.-Two were shot near Kilbrittain Castle before September 1886. In November 1891 one was seen west of Bandon.

Waterford.- Dr. Burkitt preserved three (one on 27th February 1838, and one in January 1854).

Tipperary. -Kinahan made a note of one, Annagh Inch, 1853. Another was obtained near Thurles 9th February 1892.

Wexford.- Mr. G. H. Kinahan shot one at Somerton about 1877 One was caught exhausted at Stokes town on 29th October 1886. Two trapped at Rosegarland in March 1892, were presented to the Dublin Zoological Society. One was obtained near Gorey 29th October 1893.

Wicklow.-Dr. Cox observed one between Annamoe and Lara in April 1875. A specimen was shot at Glenart, Arklow, on 22nd November 1891; and another, same place, on 4th December 1893.

Queen's Co., - Mr. Young, Brockley Park, obtained one on 15th December 1886.

Kildare.- A Buzzard was obtained at Magency Bridge, on the Barrow, on 3rd December 1887.

Dublin.-There is one from Rush In the Science and Art Museum, and another from the same locality in Mr. Barrington's collection.

Westmeath.-A very grey specimen, shot near Lough Iron, is preserved at Brittas, Queen's Co.

Louth.- One was shot near Drogheda on 22nd October 1891.

Roscommon.- Messrs. Williams & Son received a female from Carraroe Park in 1897.

Sligo.- A Buzzard was seen by Mr. Warren at Moyview on 30th December 1876; and there is another preserved at Hollybrook, shot in the same county.

Down.- Canon Bristowe saw one between Newcastle and Dundrum about 1888. Mr. Kane, a gamekeeper, residing near Rostrevor since 1894; stated in 1897 that he had occasionally met with the Buzzard in autumn there (Palmer).

Antrim.-In the Zoologist for 1874 Mr. Brunton noticed one shot near Glenarm, whose stomach contained remains of a rabbit. It was the fourth he had shot in that neighbourhood. On Rathlin, one was taken alive on 28th February 1845, and a second was found dead in March 1879.

Londonderry.- An adult specimen was trapped in a warren at Castlerock about 1895.

Tyrone.- In woodland districts Rev. C. Irvine observed one on 14th July 1876, and another on 26th August 1877 (when they still bred in Ulster).

Donegal.- Besides the Buzzards observed by Mr. Hart up to 1883, one was shot on the moors near Pettigoe, and is preserved at Glaslough, co. Monaghan.

THE ROUGH-LEGGED BUZZARD. *Buteo Lagopus*, (J. F. Gmelin.)

Rare visitor, chiefly to the northern maritime counties, and usually in October and November.

Wicklow.-One killed at Powerscourt towards the end of 1837 (?) (Thompson, l., p.76).

Kildare. -One purchased for Trinity College Museum. Seen and recorded in 1853 by Watters, p. 17.

Galway.-The only western record is of a bird shot, when apparently weary, by Mr. Henry Redmond, light-keeper at Slyne Head, in the autumn of 1866. It was presented by him in 1884 to the Dublin Museum.

Down.-One, believed to have been an adult male, knocked down with a stick when gorged, at Dundonald, in October 1831 (Thompson); two seen, one of them shot at Killinchy about the same time (Ibid.); one was described to Thompson as having been shot in Castlewella demesne,

probably about the same time as the two previous records (Ibid.); male was sent to Mr. Sheals, Belfast, for preservation, on 9th November 1895, which was shot at Portaferry - House.

Londonderry. -Another specimen, sent to Mr. Sheals, was shot at Garvagh on the 10th February 1883, and is the property of Lady Garvagh. This is the only instance I can quote which did not occur in the late autumn; one was caught at Castle-rock on the 15th November 1891 by Mr. Duggan, who preserved it in the form of a fire-screen.

Donegal.-Another was caught in a trap baited with a rabbit at Horn Head on 26th November 1891 and is in the collection of Mr. H. Becher, Beechwood, Dalkey

THE SPOTTED EAGLE.

Aquila maculata, (J. F. Gmelin.)

Has been obtained once in Ireland.

In January 1845 two were shot on the estate of the Earl of Shannon, near Youghal. One of them an immature bird, fortunately fell into the hand of Samuel Moss of Youghal, who preserved it, and it is now in the Museum of Trinity College, Dublin. It was preying on a rabbit when it was killed. Its wing measures nineteen and three-quarter inches. The two Eagles had been observed for several weeks frequenting the neighbourhood in which they were killed and were noticed sweeping over the low ground there.

The locality was in the valley of the Cork and Youghal Railway. This terminates towards the east in a wide flat bay, an inviting resting-place for migrant and wandering birds that have shunned the cliff-girt coasts of Waterford in their westward flight. Accordingly no part of Ireland has yielded more example of occasional visitant, the Heron family being specially well represented. The preservation of several of these rarities was due to Samuel Moss.

Other birds met with in Ireland at different times and places were conjectured to have belonged to the above species, but of this we have no proof.

THE GOLDEN EAGLE.

Aquila chrysaëtus, (Linnaeus).

A few pairs are still resident in the west, but the species is approaching extinction.

Seven hundred years ago Giraldus Cambrensis wrote of Ireland: "Eagles are as numerous as Kites are in other countries."

Within the last fifty years the Golden Eagle bred extensively on the higher ranges of Munster, Connaught and Ulster, but within the last fifty years gamekeepers and shepherds have so successfully employed gun, trap and poison, while the eggs and young of the remaining birds have been so systematically taken, that this noble species has been nearly swept off the land. The few that linger are still persecuted, the collector destroying what the keeper has left. Could proprietors of mountains in Donegal, Mayo, Connemara, Sligo, or Kerry be induced to protect the Eagle, as is done in the Scotch Highlands, it might yet be saved from extinction.

Among the tales of the peasantry recorded in the "Fowler in Ireland" is the statement of an old Achill man, that early one morning he saw Eagles endeavouring to force young horses over a cliff. They lashed them with their wings and stuck their claws into their backs. O'Flaherty wrote (H-Iar Connaught, 1684): "There is a kind of black Eagle which kills the deer by grappling him with his claws and forcing him headlong into precipices."

Concerning the Eagle's mode of hunting, Mr. Pike, of Achill Sound, wrote: "Generally two hunt together, a hare being the favourite prey. When the hare is started one of them follows it as near the ground as possible; the other poises in the air or waits on, and watches intently. If a rock or anything else intervenes and the bird in pursuit loses sight of the hare, the other at once stoops and takes up the running; the first then waits on. The hare has little chance of its life unless there is a hole in which to hide." He further stated (Field, 14th July 1877) that he had seen a flock of wild Swans on Keel Lake, Achill, attacked by two Golden Eagles, when they all rose and flew round at a great height. Some time after the dead body of one, partly eaten by the Eagles, was found close by. Thompson describes how an Eagle carried off a hare three or four hundred yards in front of the hounds which were pursuing it. Repeated statements have been made of this bird carrying away and then dropping a fox in the co. Waterford mountains. Colonel Vernon, when shooting with a small red setter near Killary Harbour, saw an Eagle hover close over the dog as if to pounce on it, upon which he fired at the bird; and Dr. Kane had a similar experience in co. Kerry.

While travelling in co. Mayo in 1898, Mr. Saunders noticed a Heron soaring in circles to a tremendous height; and its conduct was soon explained, for we shortly saw two Eagles similarly soaring, with steady outstretched wings. A shepherd on Mount Dart, co. Tyrone, stated that he had saved a lamb from an Eagle which made persistent attempts to carry it off, but was kept at bay by the ewe.

While the Eagles were at Powerscourt in 1889 Mr. Anton, the keeper, and his son watched one of them for a long time. It seemed as if playing with a fox on the cliffs: the fox would sidle up, apparently intent on capturing the Eagle, while the bird, whenever he approached, tumbled him away with a stroke of the wing.

Mr. Pike had a tame Eagle at Achill Sound for twenty-six years. In 1875, at the age of twenty-two she laid two eggs, and the following year four. In the Field (23rd June 1877) it is related how this bird hatched out and

fostered young gosling's, feeding them with torn flesh. Eventually one of these goslings lived with the Eagle on the best of terms; and when this bird brought out a clutch of her own, the Eagle always seemed to look on the Goose and her family as her own property. It is also told how one morning a wild Eagle was found to have forced its way into her cage.

The only nest I have closely inspected was one that had been robbed of its single egg the previous April. It was on the north side of a mountain seventeen hundred feet high surmounting a deep lake, far below which a range of cliffs looked down on the sea. On being lowered over a canopy of rock, I came to the nest beneath it, a broad platform of large heather-stems which had been built into the foundation of the structure for years. There was no cavity, but on the top was a bed of dried tufts of wood-rush; with an Eagle's feather and the skull of a hare. We saw an Eagle fly across this mountain with an occasional flap of its enormous wings, regardless of the pursuit of two Ravens which made repeated stoops at it, apparently striking it at times, while a vicious little Merlin made more rapid descents at it from above. I have other records of the Peregrine, Ravens, Choughs and Hooded Crows pursuing the Golden Eagle.

An eyrie that contained young was described to me as having on it six hares and a Grouse. In another a half-grown badger was found.

In **Kerry** these birds used to breed commonly in the mountain ranges of the three peninsulas this county contains. As to the northern one, Dr. Kane, an old resident, wrote to me in 1888: "A few years since a pair could be seen in every mountain-range in this locality. In my shooting excursions I have seen twelve in a day. Their nests were made in a very high cliff over-hanging a mountain-lake. They bred there every year within recollection, which would go back one hundred years. This year a pair returned to their former breeding grounds. As to the Reeks and adjacent mountains, Chute wrote in 1841:

"Eight of these magnificent birds have their eyries." Thompson in 1849 stated that this species had become very scarce in Kerry, but many observers testified to the fact that they bred in the Reeks and mountains west of them until about 1883, when the visit of two gentlemen is remembered as the close of the history. They took the eggs from one eyrie, and the young from another. In 1886 or 70 pair Attempted in vain to breed again at the Eagle's Nest, Killarney. Another Attempt was made to build near the Long Range in 1891, but a pair of Peregrines took possession of the eyrie and breed there still. Golden Eagles, however, still visit these breeding-places in April, but are disturbed.

The mountains that divide Cork and Kerry, south of the Kenmare River, long continued to be a breeding haunt of these birds, but in 1894 both the old Eagles were caught above Lough Inchiquin in traps set beside their young.

In **Waterford** the eyrie above Coumshingaun in the Comeragh Mountains is mentioned by Thompson as having been robbed in 1837. It was certainly used up to 1854 or 1855, if not later. I am informed that there was a second at Coumeag in the same range.

The Knockmealdown Mountains were inhabited on the **Tipperary** side by Eagles, which I heard in

1858 were then breeding there. The Galtees and the Keeper Mountain

in the same county were also inhabited by them.

Though I have no records of these birds breeding in Leinster, they have occurred frequently about Powerscourt in Wicklow, two of them in the consecutive springs of 1889-90.

Turning to Connaught, Thompson mentions eyries among the Twelve Pins, **co. Galway**, but states an instance in which a pair of Golden Eagles nested in the level part of the country, selecting a small island in the moorland - lakes. They bred in the Maam Mountains until the end of the eighties, but I know of none breeding in Galway now.

In **Mayo** they have been driven from some of their old resorts. Their eyrie in the Eriff Valley was last used in 1895, but they are still to be found in the sea-cliffs as well as the inland ranges. When visiting that county in 1898, with Mr. Howard Saunders, we saw Golden Eagles in three localities.

In **Sligo** they had formerly breeding-places both in the Ox Mountains and the Benbulbin range, while the same may be said of the **Leitrim** mountains. It is sad to read of their frequent attempts to re-establish themselves in these districts, in the neighbourhood of Glencar for instance, where they are regularly shot.

Gentlemen residing in Enniskillen inform me that there were Eagles in **Fermanagh** between 1870 and 1880.

In **Donegal** this species was resident in the principal groups of mountains. Around Muckish and Errigal it had its principal strongholds, where more than one pair were to be seen in 1866 (*Zool.*, 1867, p. 612); and I am happy to hear that in 1898 Eagles have reappeared in that part of the country.

Five were formerly seen in one day near the head of Glenbeagh by Rev. A. H. Delap, who states that Eagles were not uncommonly seen in the parish of Templecrone from 1868 to 1878. They were repeatedly shot from the nest in the

Lough Easke district, probably over Lough Belshade, where they bred for many years.

In 1962, and again in 1865, eggs were taken from the Sperrin Range between **Londonderry** and **Tyrone**.

Golden Eagles bred in Glenariff, co. Antrim, until about 1850, as Mr. Barton has informed me.

The "Belfast Guide" (1874, p. 96) states that about 1834 this species had breeding-places in the Mourne Mountains, **co. Down**.

Isolated occurrences up to recent years have been recorded from the counties of **Cork, Limerick, Wexford, Kildare, King's County, Westmeath, Meath**, and many of the counties named as their former breeding-haunts. For instance, a Golden Eagle was seen by Sir Douglas Brooke in Fermanagh from December 1894 to March 1895, and the Ron. R. E. Dillon got close to another on the ruined castle at Clonbrock in January 1895.

THE WHITE-TAILED EAGLE.

Haliaeetus albicilla, (Linnæus.)

Still breeds in one or two localities, but has become rarer than the Golden Eagle.

Until the middle of the century or later the White-tailed Eagle bred in the marine cliffs of Munster, Connaught, and Ulster, and at a somewhat earlier date in those of the Wicklow mountains. It is now on the point of extinction, its last resorts being in the most remote parts of Kerry and Mayo. The exterminating cause has been human agency, chiefly through the use of poison, as in the case of the Golden Eagle.

Pike states that the Sea-Eagle is a fowl feeder, and will, more-over, eat all kinds of fish. and often watches the fords over which Salmon leap, and makes them its prey (*Zool.*, 1877, p. 103). Thompson relates that, in June and July of the years 1835-8 successively, birds of this species used to visit the Galway side of Lough Derg in order to prey on the dead or sick fish which had been affected by the heat in shallow water. He also quotes statements that this Eagle will take fowls as well as carrion. Individuals have been captured alive when gorged; for instance, one was driven into the Lower Lake, Killarney, while feeding on a dead sheep on a sand bank.

Thompson stated in 1849 that the White-tailed Eagle was then found in suitable localities throughout Ireland (referring chiefly to the coasts), and that there was an eyrie in the cliffs of Moher, **co. Clare**. This is confirmed by Mr. Macnamara, proprietor of the place.

Kerry contained favourite abodes of this Eagle (Thompson). Mr. W. Corbet obtained three young from a nest in that county about 1876, and in 1889 an English collector took a clutch of three eggs, also in Kerry. In 1870, and probably later, a pair of Emes used to breed on the Blasket islands, but they had ceased to do so in the next decade.

In **Cork**, Thompson said that this bird had several eyries, and Harvey mentioned Sheep's Head and Bere Island as breeding localities. In 1854 or 1855 Mr. G. H. Kinahan observed a brood which were reared on Crow Island, Dursey Sound, and he knew the mountains of the Berehaven peninsula to have been a great haunt of Eagles of both species prior to 1855. Thompson mentions a White-tailed Eagle seen on Knockmealdown, **co. Waterford**, in 1837. The late Lord Lilford informed me in 1896 that he still had a female of this species, procured through Lord Waterford's keeper in 1854 from a nest in the Comeragh mountains. He recollected to have been told that the nest was in a high cliff over a mountain lake. As the only mountain lake on Lord

Waterford's property was Coumshingaun, it is possible that this species bred there latterly and not the Golden Eagle, whose young was, however, taken there in 1837 (Thompson, I 9). Eagles are said to have bred in the Ballycurreen cliffs near Mine Head.

In **Wexford**, Thompson stated this bird frequented the Saltee Islands and the burrow of Ballyteigue.

In the counties of **Dublin** and **Wicklow**, Watters states there were eyries within the last century at Lambay Island and Bray Head. The former haunt was mentioned by Ruddy in 1772. Thompson heard of another breeding resort, sixteen miles from the sea at Lugnaquilla, the loftiest of the Wicklow mountains; and among eggs that belonged to the Dublin Natural History Society is one marked "White-tailed Eagle" from Lough Bray in the same range. The caretaker at that place informed Mr. Hart that the "Grey Eagle" bred above the upper Lough Bray until about 1832, when the eggs were taken and the birds forsook the place (*Zool.*, 1883, p.156).

In or about 1875, a bird of this species was obtained at Portrane, co. Dublin, by Frederick Knee, who winged it. It survived for some time.

White-tailed Eagles used to breed before 1831 in the Mourne Mountains, **co. Down**, where

Thompson's informant had seen three or four pairs and visited a nest containing eggs. Mr. Lloyd Patterson informs me that an adult female was shot at Mount Stewart on the 30th January 1891, and is still preserved there.

Thompson, on visiting Fairhead in **Antrim** in 1839, saw a pair of these Eagles which bred there at that time. Another pair nested on Rathlin Island; but though protected by Mr. Gage, the proprietor, these Eagles had been killed on the mainland before the visit of Mr. Howard Saunders in 1866.

Canon Bristowe mentions having frequently seen a pair on mountains in **Londonderry** between 1850 and 1870, and was shown an island in the midst of a bog where they were said to have nested two years in succession, and where one of them lost its hind toe in a trap, This Eagle was afterwards shot, and Canon Bristowe had it preserved.

John Vandeleur Stewart stated in 1832 (*Mag. Nat. History*) that this bird was very common in **Donegal**, At Horn Head, Thompson saw two nests tenanted in 1832 and five adult Eagles, and the gamekeeper informed him that he had killed some thirteen of the species during the preceding four years, On my visit to Horn Head in 1891, the proprietor, Mr. Stewarts, told me that a pair of Eagles had bred there about 1880; but he remembered when three pairs bred at different points along those cliffs, and one year four pairs had bred there. He showed me a site where his father had seen an Eagle's nest, capable of near approach. A long chasm west of the Campbell conducted the sea into a cave, On one side of this the cliff was higher than on the other, and just below its top was a recess which held the nest that could be seen at close quarters across the chasm. An old nest of later date shown me in the higher cliffs, east of the Horn, was a long way below the top, where a great face of the rock overhung. A split portion stood out in front of this rock-face, and on the top of the latter, between it and the main face, were the remains of the nest. It was at an immense height above the sea. Mr. Saunders did not find Eagles breeding at Horn Head in 1866, and was told they had not done so for four or five years. He saw the remains of the last nest, which was not more than 30 feet from the summit of a stupendous cliff. A pair visited the Head in 1894, but did not breed there. Thompson mentions, as other breeding-places in Donegal, Malin Head and Tory Island, and it appears, from the statements of light-keepers, that on the latter

these birds bred on a great cliff called the Doon. Until about 1880 they are stated to have bred on the lonely cliffs of Aranmore, and Owey Island and Teelin Head are mentioned as former breeding places.

In 1878 four which had haunted the mountains of **Sligo** during the summer were all shot or taken (Whyte, in Field, 28th September 1878).

In the winter of 1851 Mr. Warren saw a pair frequenting the Bartragh sandhills on Killala Bay, **co. Mayo**. On the 4th December he shot one of them, in the second year's plumage, when it was resting after a meal of hake and rabbit. The other remained near the locality for several weeks. Up to 1856 Eagles of this species used to be seen nearly every winter about the island of Bartragh.

The huge precipices of the Mayo coast have perhaps longest afforded a home to this our largest bird of prey. In 1892 Mr. Warren was told that one long-frequented breeding-place had been abandoned since 1889, but that young had been seen in a nest further west; and he observed an Eagle carrying a hare towards the point indicated. In 1898, accompanied by Mr. Howard Saunders, we visited this locality, and in a cliff above 700 feet high we saw four old nests of different ages, some mere stacks of weathered heather-stems, one fresh and shapely, all about two hundred feet below the top and over-hung.

Thompson was informed that four pairs bred in Achill in his time, and in 1875 Mr. Pike, of Achill Sound, wrote:- "The Golden and Sea-Eagle breed here." This has ceased for many years, though this bird still visits Achill occasionally to take goslings.

Galway.- Thompson's informant, Mc'Calla, told him in 1841 that the White-tailed Eagle was then common throllghout the district about Roundstone, Connemara, and that he had visited fourteen nests, but never found more than two eggs. Some nests were in sea-cliffs, others on low trees growing on islands in lakes, and one on a green islet without any trees. The enormous diameter of nine feet attained by a nest, built in a yew on an island, resulted from its having been renewed for many years. An eyrie on Inishbofin is also mentioned, and Mr. Evatt had seen five or six Eagles there; but from the **co. Galway** this species has disappeared except as a straggler. One was shot at Clonbrock about 1879.

Kinahan made a note of one from Annagh Inch, **co. Tipperary**, 1848, but the records of such inland occurrences are few.

THE GOSHAWK.

Astur palumbarius, (Linnæus.)

Three instances have been mentioned, but no Irish specimen is known to exist.

I have seen a copy of "Jardine's British Ornithology" which belonged to the late Dr. J. R. Kinahan. At the place where these words occur in the text, "there seems to be no well-authenticated instance...in Ireland," Kinahan made the following note:- "Shot by Lord Meath's gamekeeper at Kilruddery (Wicklow), 1844. I have seen it fresh."

Watters, in his "Birds of Ireland" (1853), mentions, on the authority of Mr. Glennon, bird-

preserver, an immature male specimen obtained in the co. Longford, in the autumn of 1846.

In the *Zoologist* (1870, p. 2283) Mr. A. B. Brooke, referring to events in March, April and May 1870, writes:- "In Ballymanus Wood, in Wicklow, I saw a young male: he flew up the wood towards me, alighting on a bare branch of an oak-tree about thirty yards off. The longitudinal markings and rufous edgings of his feathers, characteristic of immaturity, were strongly defined."

THE SPARROW-HAWK.

Accipiter nisus, (Linnæus.)

Resident and common. Breeds in every county in Ireland.

The Sparrow-Hawk is our most familiar bird of prey, being more common than the Kestrel in many wooded districts, but has not so wide a range as the latter. We find it scarcer when we come to the bare parts of the west, and, generally speaking, it is seldom met with on mountains and coasts, though I have known a few trees in a bare upland tract near the sea contain the nest of this species year after year.

It is a common bird at every season in all parts of the country suitable to its habits, and I have no evidence that it migrates,* though it has occurred at the Tuskar five miles from land at a time when migrating flocks of the Thrush family were passing the lighthouse. A Sparrow-Hawk was seen to dip under them, then darting up to seize a Fieldfare and return with it to the rook. Sparrow-Hawks have been observed in the streets of Dublin. *Sparrow-Hawks" are often reported from isolated light-stations, but as some of these birds are stated to have been "hovering," and as the Kestrel is called "Sparrow-Hawk," it is impossible to make use of these statements until specimens are produced.

For American Goshawk, see Appendix.

The skulking Water-Rail has fallen a victim to this swift plunderer, and so has the Swallow. I have seen one chase a rabbit, and among the prey brought by the old Hawks to a young one that had been tethered to the ground were two young rabbits and a mouse.

I have observed the Sparrow-Hawk occasionally soar in circles, giving a few flaps of its wings at each wheel, but even then its movements are more rapid than those of the larger birds of prey. I have also, while watching for Wood-Pigeons under trees on winter evenings, shot Sparrow-Hawks which alighted, quite un-suspiciously, within range. They seemed on these occasions to be unable to see well in the failing light.

The breeding-time is in May, and I am given an instance of two clutches, of five eggs each, taken in the co. Wicklow on the 2nd of that month, but I have never known the eggs to be found in April, as is often the case with the Kestrel. The spacious nest is most frequently found in a Scotch or spruce fir in a plantation, sometimes close to a road or path, but never obviously exposed.

That the Sparrow-Hawk, far from using the old nest of another bird, builds itself a new one each year, has been invariably my experience. I have never known it breed in fissures of rocks, as Watters states, and presume the Kestrel must have been the bird so reported.

The evidence adduced by Thompson agrees with my own, and the following description by Mr. Warren also corroborates it:-

"Although it has been stated that this bird resorts to the old nests of Crows and Magpies, I have always found it to build a nest for itself, generally on a larch or fir-tree; a pair come to our woods at Moyview every season, and invariably build a new nest, neither repairing their old ones nor those of other birds, and I have remarked the same habit in the Sparrow-Hawks breeding in the co. Cork. All the nests that I discovered before the females began to sit had a well-formed cup-shaped cavity, but after the young were hatched the edges got flattened out, and by the time they were nearly fledged the nest had become a loose slovenly-looking platform."

Four eggs are rather more commonly found in a nest than five. I have heard of one instance of six in the co. Monaghan. An exceptionally large egg in my collection, one of three, measures 1.75 by 1.34 in; In another

specimen the colouring matter is confined to one mass of very dark brown, which almost covers the inferior half of the egg.

Mr. Smyth of Headborough, who has carefully watched these birds when feeding their young, tells me that when the male approaches with food he utters his call. The female then quits the nest, snatches the prey from him and feeds the young. Mr. Warren, on visiting a nest that had contained four young ones nearly fledged, found only the leg of one of them, with its three brethren, which had evidently devoured it.

THE KITE. *Milvus icinnus*, Savigny.

Rare and accidental visitor. No Irish specimen is known to exist.

Thompson quotes Smith's "Cork," 1750, which states that the Kite with forked tail "remains with us all the year," and that these birds are so common as to need no particular description." However, as Smith shortly afterwards tells us that the Hobby breeds on the sea-coast, we must use his statements with caution, especially as he was liable to be misled by the name Kite," used in Ireland for both the resident Harriers.

Thompson mentions several instances in which the Kite was stated to have been seen by persons on whom he relied in co. Cork, near Bhl.rney, and at Ballincollig Castle in 1827; in co. Antrim; at Glenarm Park, about 1830, and at Shane's Castle in March 1835, by an English gamekeeper; also in Londonderry, on one occasion, by a friend of Thompson's.

The only record, however, of a Kite shot in this country is that of Sir Ralph Payne Gallwey, who describes his finding a young male, which he killed in co Kerry , during the severe winter of 1880-1, at the mouth of the Cashen River which flows into the sea outside the mouth of the Shannon (Fowler in Ireland, p. 307).

THE HONEY BUZZARD. *Pernis apivorus*, (Linnæus.)

A rare and casual visitor in summer and autumn, occurring on the eastern side of Ireland, never on the western.

Waterford.- An immature specimen, preserved at Camphire on the Blackwater was shot there by the late Christopher Ussher previously to 1879.

Wexford.-Thompson (I., p. 78) mentions one which was obtained near Gorey in the summer or autumn of 1841. On 27th June 1890 a male was shot near Tintern Abbey, Bannow Bay, and presented to the Science and Art Museum, Dublin, by the late Captain Biddulph Colclough. In October 1992 another male (now in the collection of Mr. Barrington) having the white plumage of a dark chocolate-brown, was shot in a wood near Gorey.

Carlow. - On the 23rd September 1885 Messrs. Williams & Son received a specimen for preservation from Mr. Hardy Eustace, Castlemore.

Wicklow. - Thompson (I., p. 77) records one shot in the grounds of Kilruddery House in the summer of 1838, when another accompanied it.

Kildare. - Williams & Son state in the *Zoologist* (1882, p. 74) that an immature bird now in our Science and Art Museum, was obtained the previous autumn, 1881, near Newbridge.

Westmeath.- Amale is recorded by Thompson (III., p. 435), as killed the beginning of April 1849 at Baronston by poison set in a dead Coot.

Down. - A male, still in the Belfast Museum, was shot on the 11th June 1833 at Annadale. It was accompanied by a similar bird (Thompson).

Armagh. - In the end of September 1868 a Honey-Buzzard is stated to have been shot near Lurgan (Blake Knox in *Zoologist*, p.1478 [1868]).

Antrim. - On 7th June 1839 an adult male was shot on the strand of Belfast Bay (Thompson).

The food found in the stomachs of some of the above was earthworms, wasps and their larvre, grasshoppers, caterpillars, and pupre of the Burnetmoth.

THE GREENLAND FALCON. *Falco candicans*, J. F. Gmelin.

Rare and uncertain winter-visitor, from September to April inclusive, chiefly on the coasts of Kerry, Mayo and Donegal.

It is remarkable that this more northern species, rather than the Iceland Falcon, should be the one more frequently recorded from Ireland. Nineteen specimens have been obtained and identified; and if we include similar Falcons, seen or obtained but not determined, on the presumption that they belong to this species, we find thirty-one instances claiming notice.

Eight or ten of these Falcons were met with in pairs. Three birds were taken alive, and others were killed (one with a stone) under circumstances denoting a considerable absence of wariness.

We have six records for April, twice as many as for any other month, but each of the even months (September to April) has its records. In the winter of 1883-4, eight were obtained (one in Cork, two in Kerry, two in Mayo and three in Donegal), besides others which were seen the same season.

The above thirty-one birds were distributed as follows:-

Kerry.....7	Kilkenny.....1	Galway.....1	Donegal..... 9
Cork.....2	Meath.....1	Mayo.....8	Antrim.....1
Waterford...1			

Munster	10	Leinster	2	Connaught	9	Ulster	10
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Kerry - William Higginbotham, light-keeper, when a youth (in the thirties ?), shot on the Skelligs a "Hawk," larger than a Peregrine, which was white, with dark bars; a female was shot on the Tearaght 23rd March 1884, and a male on the 2nd April 1884. Both are in the Dublin Museum, presented by Mr. E. McCarron, light-keeper; two more were seen on the Tearaght on the 7th April, and one on the 21st April 1884, which pounced on a Puffin (Migration Report). Mr. A. J. P. Wise informs me that during winter between 1880 and 1887 a Greenland or Iceland Falcon frequented sand-hills and bogs on the shore of Castlemaine Bay. It may have been one of the above, so I do not count it. An adult male, the whitest I ever saw, now in Mr. Barrington's collection, was shot on the Skelligs on 28th September 1887 while feeding on a rabbit. A "Jer-Falcon" was observed by the light-keeper on the Tearaght on the 16th April 1890 (Migration Reports).

Cork - An adult female was captured alive in the River Lee, above Blackrock, near Cork, on 23rd November 1883. It was sent alive to England the following spring. A large "Hawk," almost white, or very light grey, was seen at the Fastnet on the 5th December 1888 (Migration Reports).

Waterford - An adult female, in my possession, was shot near Annes-town on the coast of this county in the winter of 1893-4.

Kilkenny - Kinahan noted in his copy of Jardine, under the head of Jer-Falcon - "Kilkenny about 20 years ago, Mr. Butler, 1831."

Meath - One shot near Gonnaston Castle, Drogheda, on 27th December 1851, is mentioned

by Watters as a "Gyr-Falcon." It is also noted by Kinahan.

Galway - A "White Hawk" was seen at Slyne Head on 2nd December 1883. This or another was met with at Clifden the same winter, as appears by a note of our late friend

A. G. More.

Mayo - Watters states that he had in his collection, afterwards burned, an immature male "Gyr-Falcon" shot at Ballina in December 1847. A male, shot near Belmullet, is recorded as a gift in the Proceedings of the Dublin Natural History Society for March 1863 (Mr. Warren informs me that this capture has been erroneously assigned to 1868). An adult female was shot near Killala on the 3rd April 1875, and preserved by Colonel Knox, who gave it to his brother in Sussex (Warren). An adult male, shot on Eagle Island by Mr. Henry Williams on the 14th April 1879, was preserved by him. An adult female was killed with a stone on the neighbouring mainland, a few days later, while feeding on a rabbit. (We are not to infer from the "Fowler in Ireland," p. 311, that these birds were killed on the Copeland Islands, a place from which we have no records of the Greenland Falcon.) On Black Rock one was shot on the 9th November 1883, and a female, now in Mr. Barrington's collection, described as much smaller than the last, on the 10th March 1884 (Migration Reports). A "White Hawk, something larger than a Peregrine," was seen on Black Rock by Mr. Jeremiah Trant on the 23rd November 1891, and on the 12th December 1891 Mr. Williams received from Achill for preservation a male Greenlander, probably the same bird.

Donegal. - Thompson mentions an adult male killed on the wing over a rabbit-warren near Dunfanaghy, previous to 1837, and an immature bird obtained about 1842, by the same informant, from Drumboe Castle. A female, which Mr. Glennon announced in the Field (20th February 1875) as a Jer-Falcon, was received by him for preservation, from Malin Hall, in January 1875. There is now in the Natural History Museum, South Kensington, a specimen which was caught alive after it had gorged itself with a rabbit at Moville, in the same part of Donegal, about the 1st November 1877. Another individual was captured alive at Glenmore on the 13th September 1882. The butler of Mr. Dames Longworth, when out fishing, was crossing a deep dyke, when a bird of this species, which he described as quite fatigued, flew up and he knocked it down with his landing net. It was kept alive for nearly five years, and is

now preserved at Glynwood, Athlone, where I have seen it. After its capture, a companion bird frequented the locality and hovered over the cage that contained the captive. A young female was shot at Horn Head on the 29th November 1883, and an adult female was also killed at Horn Head on the 1st

January 1884. Both these specimens are in the collection of Mr. H. Becher, who stated (*Zool.*, 1884, p. 115) that a third had been seen about the same place. An immature female was shot near Letterkenny, by Mr. Domhnal Kinahan, on the 13th January 1884, and presented to the Dublin Museum.

Antrim. - A Greenland Falcon was shot on Rathlin Island on the 9th March 1865, and was seen by Mr. Howard Saunders, who was told that it had a companion which escaped.

THE ICELAND FALCON. *Falco islandus*, J. F. Gmelin.

Very rare visitor. I only know of two Irish specimens in existence.

This bird is very much rarer in Ireland, than the preceding, but it is possible that some of the eleven cases of so-called "Jer-Falcons," or "Great White Hawks," which have not been identified, may have been of Iceland Falcons. One can, however, only compare the actual numbers of those duly determined.

An immature bird, which from its size may have been a female, was shot by the late Mr. Garrett of Belfast, in the co. Donegal, in 1859 or 1860. It is now in the possession of Mr. Alexander Garrett, at Ealing, where Mr. Howard Saunders inspected it in 1897.

Another undoubted Iceland Falcon was shot at Termoncarragh, near Belmullet, co. Mayo, in

September 1877 (Williams and Sons' books). It was lent to the Dublin Museum by the owner, Mr. Richards (More, in *Zool.*, 1881, p. 488).

In the Migration Reports (1883 p. 10) it is stated that an Iceland Falcon had been obtained at Westport that year, and there is a private note made by More to the same effect.

THE PEREGRINE FALCON. *Falco peregrinus*, Tunstall.

Resident and frequent along the sea-cliffs which bound Ireland, as well as in the higher mountain.

More fortunate than the Eagles, there are comparatively few of its breeding-resorts in which the Peregrine has been exterminated and the bird fairly holds its own wherever cliffs afford it suitable haunts.

There are but few such places along the east coast of Ireland, but Peregrines breed still on the islands of the **co. Dublin**, though they have ceased to do so on Howth or Bray Head. It is believed that there are six eyries among the lofty mountain-precipices of **Wicklow**. In **South Wexford** Peregrines breed on the Saltee Islands and on the cliffs of the mainland. On the **Waterford** coast there are eight breeding-places, and three more in the Comeragh Mountains, while in **Tipperary** there is one in the Knockmealdown Range and another resort in the Galtees. Along the coasts and islands of **Cork** and **Kerry** a long chain of eyries may be traced, one on each precipitous island. In **Clare** there is a breeding-place in a cliff far up the Shannon estuary, others in the cliffs near Kilkee and the cliffs of Moher. The Arran Islands, High Island, and the Twelve Pins are among the breeding-sites in **Galway**. Then the cliffs of Achill in **Mayo**, and a cliff not far from there about forty feet high, are homes of the Peregrine. Mr. Warren informs me that along the stupendous cliff-line of the North Mayo coast there are eight or nine eyries. There are others in the mountains of **Mayo**, **Sligo**, **Leitrim** and **Fermanagh**. The extensive county of **Donegal**, abounding in mountains and lofty peninsulas with attendant islands, affords this Falcon numerous breeding-places, among which may be mentioned Slieve League,

Tormore, Dunmore near Portnoo, Aranmore, Tory Island, Horn Head with its miles of cliffs, in which two or three pairs breed, and the lofty inland precipices of Mnckish and other mountains. In **Londonderry** there was an eyrie (now deserted) at Magilligan, but Peregrines are still found in the Sperrin Range between that county and **Tyrene**. In **Antrim** there are several eyries along the marine and inland cliffs, and two on Rathlin Island. In the Mourne Mountains, **co Down**, three pairs are reported to breed.

The Peregrine being a great wanderer in search of prey, has probably been obtained in every county in Ireland, Monaghani Longford and Carlow being the only blanks in my list of records. On the decoy-lake at Longueville, near Mallow, far from coasts or mountain cliffs, I have seen a great commotion crested among the ducks by its appearance in winter. Dr. Kane has frequently seen this Falcon follow a sportsman during the day on the Dingle Peninsula, and take away game just shot or wounded.

Mr. Warren writes: "During winter Peregrines are often to be seen hunting along the shores of the Moy estuary, feeding chiefly on wild-fowl, Curlews occasionally, but Lapwings appear to be their favourite prey lone day witnessed the finish of a splendid flight; when the Lapwing found she could not keep above the Falcon she dropped close to the water, and tried to escape by flying close along the surface. The Falcon, after several stoops, cleverly avoided by the Lapwing, was so near clutching that the poor bird, quite worn out, dropped into the water, and the Falcon, after rising from her stoop, poised a moment on her wings, and then quietly lowering herself with extended legs, lifted the Lap-wing from the water and bore her off. On another occasion I saw a flight of a Greenshank from Rosserk Abbey across the river to the Moyview shore. This bird had no chance of escaping by flight, so, screaming piteously at every stoop of the Falcon, and dropping into the water, it would dive for a few yards, and then emerging, take flight again until another stoop of the Falcon caused it to take refuge by diving. This I saw repeated several times, until the Greenshank reached the shore, where it attempted to hide in the sea-weed, and I hastened down and drove the Falcon away. Some short time afterwards I saw the ending of another flight, when a Lapwing was so exhausted that it dropped into the water and swam ashore just where I was standing, and allowed me to take it without attempting to fly. The Falcon was so fierce and determined that after I had taken up the Lapwing it waited on, flying round me and following me for some distance, and when I held up the fluttering Lapwing the Falcon used to stoop at it close to my head, sometimes coming within a yard of me.

"The terror shown by the wild-fowl on the appearance of a Falcon flying over the sands is extraordinary. Large flocks of Wigeon resting or feeding on the banks immediately take to the water. The Golden Plover and Lapwings rise and keep flying about at an immense height, sometimes for hours. The Curlew and other waders move about from bank to bank, and all the birds become so frightened and restless that there is very little chance of obtaining a shot for the day."

Mr. Sheridan relates in the Field (14th May 1887) that on May 3rd a flock of Brent Geese was observed flying towards Achill Head. A Peregrine singled out one, and brought it down. A lad ran to secure the Goose; the Hawk let go, and the Goose recovering itself took flight again. The Falcon then gave chase and knocked the Goose down a second time.

When breeding in marine cliffs, the Peregrine's eyrie is frequently found in the midst of some great colony of sea-birds. I have seen the Razorbills and Guillemots sitting on their eggs around the recess that contained young Pergrines. In fact, no great cliff-bird colony seems to be complete without its pair of Falcons. Here Puffins are the favourite prey, but this varies according to locality. I have had frequent opportunities of inspecting the Pregrines larder when visiting their eyries. Rooks are by far the most usual quarry in co. Waterford, but small rabbits and Rock Doves are also largely taken. Occasionally the Magpie, Jackdaw, Corncrake, Waterhen, Curlew, Whimbrel, Dunlin, or Partridge form the victims, and in the higher mountains, Grouse. One spring my first evidence of the arrival of the Cuckoo was afforded by the plucking-place of the Peregrine, where I found the feathers, and even the remains of a Wagtail have been found in a similar place. I have met with limbs of hedgehogs near the Pergrine's breeding-haunt on the Saltee Islands, and elsewhere the leg-bones of a sheep, which shared the plucking place with remains of birds. These may explain the sheep-bones found by Wolley (Yarrell, 4th Ed. Vol. I p.58).

This is the only indication I have found of dead meat being used by Peregrines, whose Habits seem usually to safeguard them against the poisoned food which has proved so deadly to the occasionally kill domestic fowl. A Donegal cottager complaining of the loss of his chickens, declared that the bird of prey on one occasion went off "with one in each fist." Thompson quotes a story of a Peregrine which took a Corncrake, and then, seeing another started, pursued and secured it with its second foot without letting the first victim go.

I have found in a eyrie castings which, though consisting chiefly of feathers, contained a good many fragments of various beetles.

The Raven and the Peregrine, breeding as they do in similar situations, frequently come in each other's way, and when they do there is an inevitable battle, which sometimes is carried on for an hour. Being a bird of comparatively slow and clumsy flight, the former is no match for the Falcon; nevertheless it manages to hold its own, and will sometimes breed on one side of a mountain while its foe does so on the other.

I have various evidence confirming the statement that when one pair of peregrines is killed its place is soon filled, but not until it has been fought for by rival suitors; the laying, however, may be delayed, as occurred in a case I knew, when light-keepers reported a contest of four Peregrines in April, and no eggs appeared to be laid that season.

The hereditary attachment of this species to its eyrie is shown by one of their present haunts being named in Irish "Peregrine's Cliff" (Foil-na-Showk), or "Hawk's Cliff" in the Ordnance maps; but a more remarkable instance is that of High Island, off Collnemara, still inhabited by these birds, where O'Flaherty wrote, in 1684 that "yearlie an eyrie of Hawkes is found" (H. Iar-Connaught, p. 115). An eyrie in the Wicklow mountains is annually occupied afresh, though the birds are always destroyed. In 1890 two females were trapped in it, and afterwards the male.

The eggs are usually laid year after year in the same recess in the cliffs, but if the first clutch is taken, a second is laid about a month later in another spot some hundreds of yards distant. The bird has often two or three alternative breeding-places in the same locality, and gives a preference to one of them. One long-used breeding-place is within half a mile of thirteen inhabited houses. The eyrie is always far above the bottom of the cliff, though sometimes far also from the top; but I have known one near a cliff-top 400 feet above the sea. In rare cases, as on marine islands, the eyrie can be approached on foot. Two gentlemen and two ladies lauded on such an island, and seeing a Peregrine hatching, set out to reach the spot by different routes. The ladies got to it first. But the eyrie is, as a rule, so overhung by the rock above and so inaccessible from below that it can only be reached and inspected by means of a rope. This may account for the misconceptions as to the so-called "nests" which have been perpetuated in some of our standard works. I happen to have examined it great many eyries, for I live within a day's drive of ten of them, and during the years when I collected eggs I did my own cliffing. I have never found any building-material whatever brought by a Peregrine, though she will sometimes lay in the deserted nest of a Raven or Hooded Crow, and an instance is reported in which a pair took possession of an Eagle's nest in 1891 and breed in it still. I have invariably found that, unless some such old nest is used, the Peregrine selects a ledge or shelf covered with earth, peat, or gravel, sometimes with grass; and having simply scratched a hollow which shows the marks of her claws, she lays in it; and she does not always clear out small stones. These, with the castings of the bird, occur sometimes among the eggs. So fond is she of laying on the same favourite bench, that on one occasion, when a piece of slaty stone had fallen into the nesting-hollow and could not be removed by scratching, the Peregrine laid her four eggs around it; I found them resting against the sharp edges of this fragment, which lay between them. The stone, now before me, measures 5 inches by 3½. This is not the only case in which I have found sharp-edged stones between the eggs. The prey brought for the young from year to year gradually accumulates a lot of bones and dust, in which a hollow is scratched before the next laying. Frequently wild flowers grow and bloom around, but these are all trampled and soiled during the feeding of the young. Sometimes the eyrie is visible from the opposite cliff, and sometimes it is not overhung by the rock above, but these are exceptional cases. What the Peregrine loves is a beetling-cliff above, an over-arching niche, an oven-shaped recess, or, best of all, a miniature cavern with an earthy floor. Here

I have found the bleached and addled eggs of a former year, still capable of being blown, simply pushed aside from the new laying. The eggs are frequently disposed in straggling, untidy manner, so that they do not all touch each other. In this they differ from the eggs of every other bird I know. In the county of Waterford they are laid during the first half of April. The earliest egg I ever heard of was seen on the 3rd, but at least one of a set that I took early in April must have been laid before the end of March. The earliest date on which I found young hatched was the 25th April. In a sheltered eyrie laying takes place earlier than in an exposed one. I have never known more than four eggs, which is the usual number, but frequently three only are laid. I have on several occasions found but two, and even one egg or young bird, but I suspect accidents in these cases. Hooded Crows will suck or steal Peregrine's eggs, and the breeding-shelf is sometimes so insecure that eggs may roll off. After carefully measuring all the Irish eggs available from time to time, I find the average length slightly exceeds 2 inches by 1.59; but those from the county of Waterford exceed in size those from Wexford, Tipperary, Cork and Kerry which I have examined. One eyrie in the first-named county contained year after year eggs of such exceptional size as averaged 2.16 X 1.66, the largest (now in my collection) attaining the remarkable dimensions of 2.32 X 1.76. And here I may quote a remark of Dr. Charles Smith (1746): "In the sea-cliffs of this county (Waterford) there are eyries of excellent Falcons, which were formerly of great repute

among our ancient kings and British nobility, as appears from the tenures of some lands and estates being held by presenting Hawks from this county."

In their colouring, our Irish Peregrine's eggs exhibit many beautiful variations. The ground of some is white, of others



Photograph by C. Kearton

PEREGRINE'S EYRIE.

yellowish; of others, pink; and of others, vivid brick-red. The markings vary both in intensity and colour, from the palest yellowish or reddish brown, to crimson-brown, orange-brown and brownish black. Sometimes black spots and sometimes white spots occur on red-brown eggs. One bird produced eggs with occasional crooked lines of deep, crimson brown. Other eggs have a pink ground, with markings of purple, reddish brown and dark brown. Purple, lilac, or lead-coloured under-shell markings occasionally occur. One variety has pale yellowish freckling all over, like eggs of the Iceland Falcon. Some are of a leather-colour, with scarcely any ground visible, and others are covered all over with specks, spots, blotches, and dashes of the darker hues. The colour is frequently massed intensely at the smaller end. Sometimes it appears to have been wiped off, leaving only the stain, with fresh spots super-added. One egg has a yellowish ground, but its larger portion covered with blackish brown. Ovate eggs, with the small end pointed, occur, but the common type is blunt and rounded, at times almost globular. (See Frontispiece.)

A Peregrine brooding on her eggs presents a very remarkable appearance. She crouches, with wings resting on the ground, the tip of each elevated and turned rather outwards, her neck close to the ground, and the face, with its black marks, turned slightly upwards. The duty of incubation is, as a rule, performed by the female. The male is usually on some look-out point near, and when alarmed takes flight, with outcries which are taken up in a different key by the female so soon as she is roused from her eggs. Both birds then fly in wide circles, with rapidly-beating wings, uttering a bitter, piercing "hek, hek, hek." Much excitement is occasioned by the young being approached, and swoops are made towards the intruder, but he is never attacked. I have known a mountain Peregrine to quit her eggs and disappear almost in silence, but this is a very uncommon thing.

When the young are able to stand, the female feeds them by holding up the bits she has torn from the prey. These the young take from her beak. Her superintendence of them lasts a considerable time after they have flown. This they do about the middle of June, and they may afterwards be seen following her on the wing.

THE HOBBY. *Falco Subbuteo*, Linnæus.

Rare and casual summer-visitor. Has occurred ten times, chiefly in the South-east of Ireland.

The ten instances here mentioned were thus distributed;- Cork one, Tipperary two, Wexford five, Dublin one, Leitrim one. One has occurred in April, three in May, three in June and one in August.

Cork. - The first trustworthy notice of the Hobby in Ireland was furnished to Thompson by Harvey. A coloured drawing was made of a bird shot in the summer of 1822 at Carrigrohan, and this enabled Harvey to recognize it as a Hobby.

Tipperary. - In the Field of 15th June 1867, Mr. H. B. Murray announced the capture of another shot at Marlfield, Clonmel, on the 6th June, while it was hawking for flies over the river. Its stomach

contained the remains of small beetles and large flies. This specimen, a male, as Mr. Murray informs me, was presented to the Royal Dublin Society.

I have the authority of the late Mr. William Corbet (a gentleman who long kept Falcons and many other birds) for stating that he shot a male Hobby near Bird Hill about the year 1870 (*Zool.*, 1883, p. 122). He skinned it, but a cat spoiled the skin.

Wexford. - A female was killed near Newtownbarry in May 1862, and was inspected by Newman (Field, 21st February 1863); A second Hobby is said to have been with this bird when she was shot.

In the Field of 3rd June 1869, the occurrence of another Hobby at Newtownbarry, a few days previously, is recorded by Mr. Hall Dare, who sent the skin to the editor. On the 23rd

May 1890 another specimen was taken alive on the Lucifer Shoals lightship off the Wexford coast, and is now in the collection of Mr. Barrington (*Zool.* 1890, p.357).

On the 17th May 1895, a Hobby was found dead, in an emaciated state, in the garden of Loftus Hall,

near Hook Head, and is in Mr. Barrington's collection. Again, on the 16th April 1899, an adult male was obtained at Loftus Hall and sent to Mr. Barrington.

Dublin. - In the *Zoologist* (s.s. p. 4537 [1875]) Mr. John Sclater records that an adult male was sent to him which had been shot on the 7th June in the town of Balbriggan. Its stomach contained the skulls and wing-bones of two bats.

Leitrim. -Mr. Sheals, of Belfast, informs me that a male was received by him for preservation from Glenfarn in August 1893.

THE MERLIN. *Falco aesalon*, Tunstall.

Resident in small numbers in the many mountainous counties of Ireland, as well as on some of the great red bogs of the central plain.

The haunt of the Merlin being unreclaimed moorland and mountain, it is chiefly confined to the mountain ranges, on which it breeds in every county of Munster and Connaught (if we may include Clare); as to the Wexford Mountains I can only say that it is met with there, but through the extensive range of the Dublin and Wicklow Mountains Merlins breed in many places, three nests having been found on Kippure in one year. Turning to the midland counties, we find these birds breeding not only on the Slieve Bloom Range, but also on the flat bogs which cover so much of Queen's County, King's County, Westmeath, and Eastern Galway with their tracts of moor. Then on the Carlingford Mountains in Louth, the mountains and moors of Cavan, Fermanagh and Tyrone, the mountains of the maritime counties of Ulster, Down, Antrim, Londonderry, and Donegal - on all these the Merlin has its breeding-resorts-being probably more widespread in Donegal than in most other counties, owing to the great extent of the mountain wilds, while the same may be said of Western Connaught. Yet, though it is so widely dispersed, this species is generally far from numerous; in Waterford it is apparently less so than the Peregrine Falcon, and it is but little known owing to the lonely nature of its haunts, which are seldom left in summer. From August, through autumn and winter, it wanders over the cultivated districts and down to the coasts, having even been shot two miles from land; and to Dublin Bay it is an autumnal visitor, appearing in September and feeding on Dunlins. The Merlins bred on Irish moors and mountains seem sufficient to account for these occurrences, though it is not improbable that some birds come in winter from Britain, especially to Leinster.

Mr. H. Blake Knox has been, when out Snipe-shooting followed by one of this species, which never struck a Snipe on the ground, but if the latter were shot or wounded would seize it, if possible, before it had fallen, and carry it off.

Chaffinches are often taken, also Skylarks, Yellow-hammers and Blackbirds, but not Grouse of any age, to my knowledge. On Rathlin Island a Merlin was caught when pursuing a bird into a house.

Mr. Campbell when watching Lapwings near Lough Swilly saw a male Merlin fall on one like lightning, and on missing its mark, with a sudden upward sweep and turn it struck the bird dead to the ground; the Merlin tried to carry off the quarry, but soon had to drop it (*Irish Naturalist*, 1894, p. 187).

Mr. Warren has seen most exciting flights at Dunlins and other small waders in winter, but states that the finest flights were at Skylarks. On one occasion, while looking at some men With a horse and cart removing timber cast up by the sea, a Lark dropped down beside them, and ran under the cart: one of the men drove it out, when a Merlin, that had evidently been waiting overhead, dashed down at the Lark, and in a few moments they both disappeared far to seaward.

The Snipe, when pressed hard, will fly straight up, to defeat the Merlin's attempt to rise above it.

I have seen one of these birds making most vicious swoops on a Golden Eagle, without, however, appearing to strike it; and Thompson mentions a Merlin attacked by Swallows, which retaliated so furiously as quickly put them to flight.

At Colebrooke a male and female are preserved, with this inscription : "Breeding in a tree on an island in Lough Erne."

On a moorland lake of Connemara I have been taken to a very small, steep island on the top of which a Merlin had bred, and which was covered with tan heather, dwarf rowan, juniper, bracken, osmunda, and wood-rush; and Mr. H. Leybourne Popham informs me that he thrice found Merlins' nests on such islands in Connemara lakes. The Merlin builds no regular nest, but selects a slight hollow in the ground where, in May, the eggs are laid, sometimes on a broken sprig or two of heather, or on some withered mountain grass, but not unusually on the bare soil; this bird is also said to lay on a tussock of heather near the edges of the inland bog. A mountain brow or the top of an escarpment, backed by tall heather, and having a good view in front, is a favourite site.

THE RED-FOOTED FALCON. *Falco vespertinus*, Linnæus.

Accidental visitant, having been obtained but once in Ireland.

A specimen, now in the Science and Art Museum, Dublin, and formerly in the collection of Mr. T. W. Warren, was shot in the county of Wicklow, in the summer of 1832, just as it had pounced at a Pigeon of at least its own size.

THE KESTREL. *Falco tinnunculus*, Linnæus.

Resident throughout Ireland, but in winter becomes scarce in part of Leinster and Ulster.

There is no bird more widely distributed in Ireland than the Kestrel (unless it be the Wren). It breeds in the precipitous sides of the higher mountains, as well as in the cultivated and wooded districts, and also commonly in the sea-cliffs, extending its range to such islands as the Blaskets, the Arran Islands, Achill, Aranmore and Rathlin but it is nowhere numerous, and I have never known two pairs to breed near each other.

Though I have failed to discover any part of Ireland from which the Kestrel is absent in winter, several informants agree in stating that at that season its numbers sensibly diminish. This applies to Northern Donegal, the neighbourhood of Belfast, the counties of Armagh, Longford, Queen's County, Wicklow, and perhaps Wexford, but not to the provinces of Munster nor Connaught. Doubtless some individuals change their quarters without leaving Ireland in winter, for a few frequent church towers in Dublin at that season.

Some works on ornithology have left us in doubt whether the Kestrel does not build a nest of its own, and a "life-case" has been arranged representing Kestrels with a fresh-looking nest in a rock, but inspection of a great number of breeding-places has invariably shown me that this species, like the Peregrine, never brings any building materials. It will appropriate the deserted nest of a Hooded CJ;OW or Magpie, which indeed is its usual habit in wooded districts, and in the bare west of Ireland such birds build in very low bushes on islands in lakes. In the case of an old Magpie's nest the fibrous lining is removed and the eggs are laid on the bare clay of the cup. When the Kestrel breeds in cliffs or the sides of quarries, (where its domicile becomes the miniature of the Peregrine's eyrie,) an earthen bed is chosen for the eggs, in a recess more or less deep and overhung by the rock, and there the bird scratches a little nesting-hollow, if the nature of the materials admit of so doing, but never lays on the bare rock. In one case I found the eggs in a little chamber at the end of a den so long that it took a six-foot pole-net to reach them; and in another they were laid on the earth that covered the brow of a quarry close to the edge and backed by tall heather, somewhat like a Merlin's breeding-place. The niche containing the bright ruddy eggs is sometimes surrounded by a mass of luxuriant verdure, and I once found the clutch laid in grass that grew on the breeding-shelf. A recess in a lofty ruin is frequently selected, and occasionally a hole in a tree; thus the Rev. Allan Ellison found eggs lying on a bed of rotten wood in the flat bottom of a hollow which was about a foot in diameter, and ran down some two feet into the large limb of a beech. The eggs are laid at intervals of two days or so; accordingly the first nestling hatched may be more than a week older than the last, the number being from four to six. As in the case of the Peregrine, the eggs lose their freshness of colouring and their markings become blurred during incubation; in some varieties purplish or lilac under-shell markings occur. They are often laid in April in the south of Ireland, more usually early in May, this bird being an earlier breeder than the Sparrow Hawk or the Merlin.

The poor Kestrel has often to fight vigorously for its eggs against the determined attacks of the Hooded Crows so common in our sea-cliffs. I have seen it hunted perseveringly by Rooks but its deadliest enemy is the gamekeeper, who generally seems incapable of distinguishing between this harmless bird, which is commonly called "Sparrow-Hawk" in Ireland, and the true owner of that name.

In illustration of the sort of prey Kestrels will take, I may mention having watched a family party hovering quite low, over our coast, and pouncing frequently on the ground, which was covered with very short herbage; on examining the place, I found it abounded in grasshoppers. Kestrels will eat dead animals, for I have more than once found, to my sorrow, that they had died from eating poisoned rats left for Magpies; Mr. Sinclair too, had a dead goose dusted with strychnine and put out in a field, and next day two Kestrels were found dead beside it. Dr. Burkitt described to me one which was taken, with its claws entangled in the fur of a stoat, which fiercely defended itself, and a Kestrel in Mr. Barrington's collection was taken in the act of killing a Starling. The regular visit of this bird to each place on its daily beat in quest of prey has been observed in Ireland as elsewhere.

A specimen was described, shot in the co. Wexford, in which the whole of both wings, the lower breast and abdomen, were white, and the claws pinkish white (*Irish Sportsman*, 16th January 1892).

THE LESSER KESTREL. *Falco cenchris*, Naumann.

Accidental visitor. Once obtained in winter.

An adult male of this beautiful little Falcon was shot near Shankill, county Dublin, on the 17th of February 1891, while feeding on earth-worms in a ploughed field. The bird had been noticed as far back as the 8th or 10th November 1890 at Glenamuck in the same neighbourhood. It used to follow the plough like a Gull, walking along the furrows; then it would rise and quarter the ground until it saw a worm, on which it would immediately drop. It appeared to disregard small birds, numbers of which frequented the same field. At first it was very tame, but after it was fired at it became wary of persons with guns, though it would still feed close to the workmen. It was thus repeatedly seen during three months in the same locality on the borders of Dublin and Wicklow (More, in *Zool.*, 1891, p. 152). The specimen is now in the Dublin Museum.

This is an instance of a European summer-migrant, which, having wandered to Ireland towards the end of the year, remained for the winter.

THE OSPREY. *Pandion haliaëtus*, (Linnæus.)

A casual visitant which occurs chiefly in autumn. Not so rare as has been supposed.

In the time of Giraldus Cambrensis the Osprey could not have been very uncommon in Ireland, for he wrote: "There are many birds here of a twofold nature called Ospreys. It is wonderful how these birds and I have witnessed it myself-hover in the air over the waves, and when they discover fishes lurking, they pounce upon them from on high with headlong speed, and diving come to the surface," &c.

There is no record of the Osprey ever breeding in Ireland. Sir R. Payne-Gallwey states: "It is yet to be met with now and then on various parts of the Irish coast. I have several times been interested in observing one of these birds fishing" ("Fowler in Ireland" p. 305).

We have fifty-one notices (some relating to more than one Osprey) in which localities are given, and which are thus distributed:-

Kerry.....12	Wexford.....3	Galway.....3	Fermanagh.....1
Cork.....9	Wicklow.....1	Mayo.....3	Monaghan.....2
Waterford... 2	Dublin.....2	Roscommon....1	Armagh.....1
Clare.....1	Queen's Co.....1	Sligo.....1	Down.....2
Limerick.....1	Kildare.....1		Antrim.....1
Tipperary....2	Meath.....1		
Munster27	Leinster.....9	Connaught.....8	Ulster.....7

The absence of any records from Donegal and Londonderry is remarkable, while Cork and Kerry have been so frequently visited as to suggest that Ospreys, like many other birds, arrive chiefly along our south-east coast, and pass south-westwards round Munster.

Thirty occurrences of the Osprey in Ireland, whose dates are forthcoming took place in the following months:-

January	April....1	July.....3	October.....8
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February....1 May... 2 or 3 August.....3 November.4
 March.....1 June... 2or 3 September..5 December. -

Thus, although examples have been recorded during spring and summer, this bird visits us most frequently during the autumn migration.*

Kerry.-Thompson saw an Osprey fishing on the lower lake, Killarney, on the 13th July 1834. About 1872 one was obtained in the same locality and preserved by Messrs. Williams & Sons (Field, 8th August 1874). Mr. Ross, former gamekeeper on the Muckross estate, told Sir R. Payne-Gallwey that Ospreys were often seen hovering about the lakes of Killarney; and Mr. Chisholm, his successor, has informed me that one was seen there in the winter of 1896-7. A specimen in the Science and Art Museum was obtained by the late Mr. Andrews, from Kerry. Mr. A. H. Bowles stated to Sir R. Payne-Gallwey that he had seen the Osprey in Kerry; one, probably that now in possession of Judge Neligan, was shot near Tralee Bay about the end of September 1870 (*Zool.*, s. s., p. 2406). Between 1880 and 1887 Mr. A. J. P. Wise found this species on Dingle Bay, in August and in November, and one passed across Caragh Lake; its occurrence on Dingle Bay is mentioned in the "Fowler in Ireland." In Land and Water, 2nd March 1895, the capture of an adult bird at Killorglin the previous February is recorded.

Cork. - A specimen in Queen's College, Cork, was shot at Lakelands in that county on 14th October 1848, and Dr. Harvey mentions another shot on the Bride River in 1852; another, recorded in the Field of 6th July 1867, was shot the week before on the Blackwater above Mallow. In October 1881 three were shot in co. Cork, one of them at Castle Martyr, and another at Bandon Park; Mr. Rohu, who preserved them, showed me another shot near Macroom in September (?) 1885. He preserved a fifth, shot at old Dromore, co. Cork, on 11th May 1893 (*Irish Nat.*, 1893, p. 201).

Waterford. - A specimen was obtained near Dunmore East in September 1875; another, presented to the Cork Museum by Mr. P. Smyth in 1879, was shot some years previously in the Bride in the same county.

Limerick. - The Science and Art Museum, Dublin, contains one obtained at Castleconnell in November 1864.

Tipperary(?). - Mr. a. Honner describes one he saw fishing on Lough Derg in Mayor June 1890 (Dr. Morton). A female, which was in company with another, was shot near Cahir on 10th October, 1899 Messrs. Williams & Sons).

Wexford. - A fine specimen, shot on Wexford Harbour in November 1880, was preserved by

* In the autumn of 1881 twelve are stated to have been shot within one month, according to Sir R. Payne-Gallwey. These would increase our autumn records by eight.

Whelock. An immature bird was shot at Courtown on 17th September 1885, and another in the same locality in 1890.

Wicklow. - A female, a bird of the year, was shot on the river near Glendalough on 15th October 1896.

Dublin. - Two were procured at a pond near the Dublin and Kingstown Railway on 19th October 1839 (Thompson). An immature Osprey, now in the Dublin Museum, was shot at Clontarf in November 1881; this or another bird had been observed towards the end of October five miles south of Dublin mobbed by Rooks.

Kildare. - One was obtained at Garristown on 23rd October 1837 (Thompson).

Queen's Co. - One was killed previously to 1833 (*Ibid.*).

Meath. - One was captured near Kells on 20th July 1874 (Williams, in *Field*).

Galway. - One was seen at Oughterard, on Lough Corrib, in August 1835, in which district others had been shot (Thompson). In 1895 I learned that a Mr. Geohegan in Oughterard possessed a specimen.

Mayo. - One was seen fishing on Keel Lake on 12th March 1880 by Mr. Sheridan, who preserved another, which was also met with on Keel Lake on 15th April 1892. (These two are the only records I have for March and April.)

Roscommon. - Major King-Harman described to me an Osprey that he had seen fishing on Lough Key, between 1850 and 1860.

Sligo. - Colonel Cooper mentioned another seen at Lough Arrow about 1888.

Fermanagh. - Dr. Patten saw an Osprey sweeping over Lough Erne on 23rd August 1889.

Monaghan. - One was shot on Castleblaney Lake the second week in May 1878, and another at Glaslough in October 1879, which is preserved at Glaslough House.

Armagh. - An Osprey was shot on Lough Neagh, near Lurgan, on 14th July 1888 (Sheals).

Down. - A specimen in the Belfast Museum was obtained' by Thompson on the Mourne Mountains in the autumn of 1851; one was shot at Strangford about 1877 and preserved by Mr. Sheals.

Antrim. - Another was shot near Ballymoney on 30th May 1891 (Lloyd-Patterson, in *Field*).

The vignette below, from a photograph by Mr. G. E. H. Barrett-Hamilton, represents Sybil Head in Kerry, from the south.



Order STEGANOPODES.

Family PELECANIDÆ.

THE CORMORANT. *Phalacrocorax carbo*, (Linnæus.)

Resident and common. Breeds on many precipitous parts of the coast, and on inland lakes in Connaught.

The Cormorant is a frequenter of fresh waters, and on most parts of the Irish coast it undoubtedly exceeds the Shag in numbers; but as it comes more under human observation its comparatively greater abundance is liable to be over-estimated. On the wilder coasts of the west, however, and especially on the coasts and islands of Connaught, it is decidedly scarcer than the Shag, which is abundant there. Between the Saltees and the co. of Antrim the Cormorant's only breeding-places are Wicklow Head and Lambay, the east coast being deficient in cliffs, but on the south and north coasts it has numerous colonies. It breeds on islands in Connaught lakes, and on rivers in the south, a long way from the sea, e.g., the Laune at Beaufort House, co. Kerry, the Blackwater above Fermoy, and possibly the Suir and the Nore but such breeding-settlements are few in Munster and Leinster.

All the Irish lakes and larger rivers where fish are plentiful are more or less frequented by the Cormorant, even in the Bummer season, when the non-breeding birds resort to them; while in winter much larger numbers visit some of the lakes. Thus an island on Lough Coole, Fermanagh, is called "Cormorant Island," from the numbers which frequent it from September to April. In Bummer they come every morning at day-break to Lough Derg, flying very high, and descend at a rapid rate in a spiral course, making a loud noise. On the other hand, an island in Lough Fern, Donegal, is the night-resort of a number of Cormorants, which fly overland in V formation from Lough Swilly every evening. A bare tree beside a river is a favourite perch, and the birds alight on the branches gently, but a new comer has been observed to topple over time after time, and either perform summersaults in the air as it fell or catch the branch in its beak, and hold on fluttering and dancing beneath for several minutes (G. H. Kinahan). Cormorants often have a bad time at sea in storms, when they have been known to keep to the Tuskar, coming into the stores, and remaining on the rock until they starved. They often frequent such rocks between September and April, after which they leave them.



CORMORANTS' NESTS IN TREES

Mrs. Wynne, Photographer, Castlebar

In co. Waterford Cormorants commence to lay in April; and on the 4th of April 1896 several nests contained from one to three eggs, which was exceptionally early. In exposed situations the birds are later, and they lay at different times until July, on the 23rd of which month I have found eggs. In a large colony one sees fresh and incubated eggs, blind young just hatched, and others of all sizes up to the birds resembling plucked geese, which move before one in a throng and fall over the rock if still followed. Young may be seen sometimes on the breeding-ledges as late as August. The site occupied by a colony for a few years, though undisturbed, is apt to be changed, and a neighbouring cliff resorted to instead. The nests are placed on open ledges and spurs of rock in elevated and exposed spots, not overshadowed like the nests of Shags; they are composed beneath of furze sticks mixed with seaweed, then briar or ivy stems from the cliffs, lined with plenty of grass, and are often garnished with wreaths of ivy having fresh green leaves; burnt heather-sticks with moss for lining are used in Donegal (Hart). On Lough Cutra, co. Galway, and Lough Tawnyard, Mayo, numbers of Cormorants breed in trees on islands in company with Herons, and I have seen a similar colony on an island in Lough Key, Roscommon, the nests being from thirty to forty feet high in ash-trees. When built in trees they are more compact structures than Herons' nests, which are large and straggling. Lough Attymas in Sligo contained a dense colony of seventy or eighty nests, built as closely as possible, on bushes, on walls, and on the ground (*Zool.*, 1882, p. 67). Another lake-island at Carrowmore, co. Mayo, has some thirty nests on the ground among tall weeds (Warren), and ruined castles on islands in Loughs Corrib and Carra are also breeding-places of this bird. The summit of the Makestone Rock at the Saltees is the site of a large colony,* where we watched the birds building. One of the pair would arrive with materials while its mate remained on the nest, and the latter used them if they reached her, though this was to some extent prevented by the birds on neighbouring nests snatching them from the bearer in transit.

On crowded bird-cliffs Cormorants do not leave their eggs exposed, but if the parent birds are driven off the Gulls immediately steal their treasures, or a pair of Ravens nesting close by continue to flit about the nests and pick up exposed eggs.

It has been supposed that the white patch on the thigh is lost by the female before nesting commences, but Mr. P. Gough, who had a colony of Cormorants under daily observation, informs me

*See Kearton's "With Nature and a Camera," p. 251.

that there is no appreciable diminution in these white spots until incubation is nearly finished, and that they do not disappear until the young come out. On the 28th of May I have seen some Cormorants with the white patch, others without it, in co. Waterford, and one bird exhibited it in co. Mayo on 6th June 1898.

THE SHAG. *Phalacrocorax graculus*, (Linnæus.)

Resident. Breeds on precipitous coasts of the four provinces. Is the more numerous Cormorant in Galway, Mayo and Donegal.

The Shag, being an exclusively marine bird, is not seen on inland waters like the Common Cormorant, nor does it love estuaries or flat coasts as much as those that are rocky. It is, indeed, to be found round Ireland generally, but between the Saltees, off Wexford where numbers breed and Antrim, I only know of Wicklow Head and the co. Dublin islands as breeding resorts of a few. From Wexford and Antrim westwards the Shag nests in beetling cliffs and caves; and it becomes abundant round the western coasts, delighting specially in those awful cliffs against which the Atlantic rollers break with unchecked fury, where it may be seen swiftly winging its way over the turmoil to its breeding-cave. It is far hardier and more at home in a rough sea than its congener, and great flocks of Shags may be sometimes met with on the shores of Connaught, either fishing in such inlets as Broadhaven, or sheltering themselves in stormy weather in the Moy estuary, where Mr. Warren estimated that there were two thousand in December 1890, though that was exceptional. This species becomes more numerous on the Dublin coast in winter.

The Shag does not perch so easily as the Common Cormorant on a pole or buoy, but prefers a rock. Thompson quotes two instances of storm-driven birds which were taken in Cavan and Fermanagh, while a similar instance took place in King's County, fifty miles inland, as related by Mr. Digby (Field, 3rd February 1894), when a Shag fell down a kitchen chimney on the evening of 12th January, during a southerly gale.

The Shag, like most birds which lay in sheltered nooks, is an early breeder, earlier than the Common Cormorant; just as the Razorbill lays before the Guillemot. I have seen an egg on the 6th April; three in a nest on the 8th; and taken a clutch slightly incubated on the 15th; but, as in the case of the Cormorant, eggs may be found in some nests, while others contain large young ones which are able to leave them and escape from the observer; this was noticed on 22nd May on the Saltees. The Shags there breed in dens in the boulder clay that

overlies the rocks, and where there is a series of these, with a Shag standing at the entrance of each above the throng of *Alcidae*, they remind one of police guarding a public place. They also breed there under fallen masses of rock, and on uncovered ledges, but not near the top of the cliffs. A good example of a Shag's nest under a beetling cliff is illustrated at p. 33 of "Wild Life at Home"; the photograph was taken by Mr. C. Kearton on our Waterford coast. This bird, however, loves a sea-cave, on the ledges of which several pairs may be seen nesting close together. Though usually breeding in small colonies, Shags often build apart from others of their species, the choice of locality being very much determined by the existence of a suitable site. The more frequent number of eggs is three, but four are not at all uncommon; they are more apt to approach to the elongated shape than those of the Cormorant.

The persistence with which this bird will sit on her nest and bob her head in the face of attempts to scare her away is amusing, and I have almost touched one on a crowded bird-cliff while she menaced me by croaking, snapping and shaking her open lower mandible.

On 2nd June a Shag on the Skerds, Connemara, had remains of the crest, while other birds had lost it, and on the 9th we saw another with a crest on the North Mayo coast.

THE GANNET. *Sula bassana*, (Linnæus.)

Occurs off the coast at all seasons, but not commonly in winter. Breeds only on two lofty rocks in the extreme south-west.

The Gannet rarely lands except on its breeding-stations, which are island-rocks several hundred feet high, though it occasionally alights on similar rocks. Elsewhere round our coasts it seems to live chiefly on the wing, and is a great wanderer. From the voluminous entries in the Migration Reports we gather that a seasonal movement takes place in spring and autumn; and this commences sometimes as early as January, is in full swing in February, March and April, and often lasts to some extent into May and June. During these months the Gannets pass northward, often continuously for a month or two together, both up the coasts of Leinster and of West Connaught; A light-keeper on the North Arklow lightship remarked that they were going "to Scotland for the breeding-season," a very probable suggestion. From Carnsore Point, however, to the Fastnet we find the general direction of the Gannet's flight during spring is south-westwards towards their Irish breeding-haunts, though it is evident that many do not stop there, but continue to move on northwards past Sljne Head and Black Rock, as before stated. The return movement is observed in autumn, though not so regularly.

The large numbers; mainly adults, seen on the north coast during summer, come from Scottish breeding-stations to fish. Mr. Howard Saunders has watched from the top of Rathlin Island a continuous stream of Gannets from Ailsa Craig in the early morning. Great, however, as is the Gannet's power of wing, birds breeding off Kerry can hardly fish on the coasts of Connaught or Wexford, where some occur through the summer, and this suggests that many do not breed. Immature birds seem to be specially noticed in summer off South Wexford.

The colony of the Skelligs arrives there in February and departs in October, but a Gannet has been seen on the rock as late as 7th November 1887; fresh eggs are to be found there and on the Bull Rock early in May. The Little Skellig was the only breeding place known to Smith, who published his volume on Kerry in 1756, and in 1850 the number breeding there was computed at five hundred pairs (Thompson, III, p.264). I visited this island in 1887, where an increase in the numbers had taken place owing to the building on the Bull Rock having driven many from thence. The Gannets nest on the eastern ridge of the Little Skellig and its slopes, and they crowd some of the elevated platforms, so that miles away they look like a flock of sheep lying on a hill. I have walked among them, and some will sit until they are caught. I again passed close under this island mountain in 1897, and observed fresh tracts on the north side occupied by the Gannets. Other parts of the island and its cliffs swarm with Gulls and Auks.

The first mention that appears of the colony on the Bull Rock (seventeen miles south-east of the Skelligs) was made in 1868, when Caldwell stated that he had obtained eggs there (Proc. Dublin N.H. Soc.). Mr. Hutchins visited it in June 1868 and found many hundreds of Gannets; when I went there in 1884 with Mr. Barrington and Mr. White, we found them, probably in increased numbers, breeding on the elevated ledges at both ends of the island. Though the building of a lighthouse in 1884-5 disturbed and diminished them for a time, they have again much increased in late years, and in 1899 their nests numbered several hundreds. This colony, however, probably never approached in size that on the Little Skellig, which covers nearly seventeen acres, as against one acre covered by the Bull Rock, besides which the height of the Little Skellig is 440 feet, while that of the Bull is only 302, The Fastnet never could have been a breeding-place of the Gannet, as it is

but 52 feet high, and it seems very doubtful whether this bird ever bred on the Stags of Broadhaven, which I saw in 1898.

The nest of the Gannet is composed, as on the Skellig, of grass and other herbage if available, otherwise of seaweed; but such articles as rags and paper, the straw of wine-bottles and pieces of cork are used.

Thompson was informed that over a hundred Gannets were caught in a train of nets which were sunk to the depth of thirty fathoms.

Gannets, like other sea birds, are sometimes driven far inland by storms. One was seen on the Shannon, near Carrick, for some time before it was shot; it used to Bleep with its head under its wing, letting boats pass close to it. While thus asleep on the sea Gannets have occasionally been taken alive.

The view of the Little Skellig is from a photograph by Mr. G. E. H. Barrett-Hamilton, and kindly lent by him.



Order HERODIONES.

Family ARDEIDÆ.

THE COMMON HERON. *Ardea cinerea*, Linnæus.

Resident and common, breeding in every County.

The Heron inhabits the whole of Ireland from its centre to the ends of its farthest promontories; and as it has a power of adapting itself to different local circumstances, it is even more common in Connemara and other districts of the extreme west than it is in the most cultivated counties. As a proof of this, it may be mentioned that ninety Herons have been shot in one day by the tenant of a Connemara fishing or his men, and five to six hundred eggs are said to have been destroyed in a season. Herons may be seen fishing on the remotest rocks, as well as on the lakes, marshes, and rivers of the interior. They often fly miles out to sea, for there are reports from every rock-station and light-vessels of Herons visiting or passing those places. Sometimes they are observed flying still farther out to sea, and sometimes returning from it, but the only record of seasonal migration that I can quote, is Thompson's mention of Herons crossing from Scotland in the autumn.

Besides their ordinary diet of fish, frogs, etc, Herons will eat rats and young birds. The parent birds seem to know this, for Lapwings and Terns make vigorous attacks when their breeding-grounds are invaded, and I have heard vehement outcries uttered by Wild Ducks while a Heron was sailing over a reed-bed, and examining it closely for young flappers. In hard frost exhausted Snipe are devoured, and a Heron has been seen to come down upon and carry off a screaming Water-hen. It is said that if an eel too large to be swallowed alive is captured, it is carried off and disposed of on dry land. Herons may be seen in August, with their young, picking among the sand-hills of the coast.

When the inhabitants of our heronry return from fishing, they fly at a considerable height, and on arriving over their home, they precipitate themselves swiftly towards their nesting-trees with expanded wing's, first turning one uppermost and then the other.

This being a bird of heavy flight is very liable to attack on the wing, and the Rooks, which often breed around the Herons, habitually attack them whenever they show themselves in the air; but when a pair of Ravens come to raid a heronry, all the occupants take flight. I have seen a Heron soaring to an immense height to avoid a Golden Eagle, and decided alarm has been caused even by a Kestrel, the Heron, though much larger, crying out as it rose in circles to avoid the little Windhover.

Though Ireland formerly contained many large heronries, there are few nowadays which can boast of from thirty to a hundred nests, five to twenty being much more frequent; and one or two nests are often found quite apart from any others. Lofty trees are chiefly resorted to, especially those whose trunks are shrouded in ivy,

rendering it difficult to climb them; Scotch firs are preferred, but beech and larch are also used; the same tree rarely holds more than one, or at most two, nests. In the bare western parts of Kerry, Galway, Mayo, and Donegal, the heronries are on the low trees or bushes which sometimes cover lake-islands, these being often the only wooded spots in the country. Hollies, which grow to a great size, are the Heron's favourite trees in those districts, but sometimes the nests are in salallows or on the ground; on an island in a Donegal lake an absurdly small tree held a nest that had been added to for many years, until it measured four feet nine inches in diameter, though but six feet from the ground. In a neighbouring lake, exposed to view from all the cottages on the hill-side, a Heron had built on the stony brow of a crannoge, or artificial island, while low hollies behind held two other nests. On islands in Lough Cutra (Galway), and Lough Tawnyard (Mayo), Herons breed in trees in company with Cormorants; in the later spot the nests of the Herons are in hollies in the centre, while the Cormorants occupy the marginal belt of various trees. There are several small heronries in cliffs on the coast, for instance on Bere Island, Bantry Bay, at the end of the Dingle Peninsula and above Anascall Lake in Kerry, and near Belmulletin Mayo, while a similar colony existed at Island, co. Waterford, until the birds were shot; a solitary nest was found in a cleft of the precipice on one of the Blasket Islands (Turle, in *Ibis*, 1890, p. 7), and an ivy-covered ruin has been used as a nesting-place; Herons are our earliest breeding birds, assembling on their nesting-trees here towards the end of January, when building commences, and the heronry resounds with screams. Laying takes place early in February, unless it is arrested by frost and snow, and in a sheltered heronry at Salterbridge Dearly every nest contained young on the 1st March. Four eggs are most commonly laid, but often five, and I have found three which were sat upon. The young are able to fly in May, and the old birds frequently lay a second clutch in that month or early in June. Mr. Warren has seen a Heron, while engaged in building its second nest, importuned for food by its first family, which the parent encountered with scolding sounds. One bird, presumably the female, remains on the nest, and builds it with the sticks brought by her mate; the structure is large and cup-shaped, lined with twigs, or sometimes with dried stems of deciduous plants or a little grass, but I have never found wool.

A cream-coloured Heron, mottled with pale brown, was preserved by Messrs. Williams & Son (*Zool.*, 1881, p. 468), and a similar bird is in the Dublin Museum.

IRISH HERONRIES.

In the following list of places where Herons breed it is sought to give the estimated number of nests, excluding those places where that number is less than four, though of the latter description there are a great many in Ireland. From the length and difficulty of the inquiry, and the fluctuating character of many Irish heronries, complete accuracy seems unattainable, but corrections up to date will be acceptable.

Kerry. - Beaufort (large), Caragh Lake, Chute Hall, Clonee Lakes, Derryquin 10; Eask (cliffs), Kilcolman, Kilmakilloge Harbour, Loughanscaul (cliffs), Lough Guitane, Lough Illaniana, 12; Lower Lake (Killarney), 12; Sallow Glen, Sybil Head (cliffs), 8; Upper Lake (Killarney),

Colrk. - Air Hall, 5; Ahenesk, Ardnagashee, 4; Ballyedmond, 4; Ballygiblin, Ballylickey, 6; Ballymagooly, 4; Ballyrisode, 5; Ballywalter, 4; Bantry House, Bear Island (cliffs), 4 or 5; Blarney Demesne, 4; Bowenscourt, 5; Bunalan, Cappyaughna, Carrignamuck, 10; Castle Freke, 16; Castle Harrison, Castle Martyr, Castle Mary, Castletownsend, 10; Church Hill, 8; Clashads, 6; Courtmacskerry Wood, 5; Creagh, Doneraile Court, Drishane, 20; Dromorone, Drumleena, 5; Dunboy, 4; Eastgrove, 12; Foaty, 7; Frankfort, 5; Garretstown Wood, 5; Glanatore, Glanduff Woods, Glengarriff, 10; Glyntown, 14; Gouganebarra, Gurnagrough, 4; Inishannon, Kilbrittain, Kilmurry, 4; Kinrath, 4; Lisnagar, 4; Little Island, Longueville, 6; Lough Hyne, 4; Macroom, 10; Mill Crittle, 4; Myross Wood, 40; New Court, 6; Newmarket, 4; Oakmount, 12; O'Donovan's Cove, Pallastown, 6; Rathduilne, 5;

Rathmore, 4; Reenroe Wood, 12; Rostellan, Rye-court, 6; Seafield, 4; Shippool, 20; Timoleague, Vernon Mount (large), Whitehall (large).

Waterford. - Ballynatray, Cappagh, 6; Cloncoskoran, Coolnagour, Dromana, 12; Faithlegg, 6; Gurteen, 30; Kilmanahan, 15; Mount Congreve, 38; Sa1terbridge, 20; Shanakill, Strancally, Tallow Hill, 6.

Limerick. - Ballynagarde, Beachmount, Curragh Chase, Foynes, Kilballyowen, 40; Mellon, Mount Coote, Tanavalla, Tower Hill.

Clare. - Ballvnahinch. Bunratty, Carnelly, Clifden, Dromore, Edenvale, Knockalough Lake (on a ruin), 12-20; Rathlaheen.

Tipperary. - Cahir Park (Kilcommon), Castlake, Dundrum, Kilboy, Kilcooly Abbey, 15; Kilshane, 24; Kiltinan, 4; Mobarnan, 5; New Inn, Rathronan, Shanbally, Sopwell Hall, Templemore, Youghal.

Kilkenny. - Castletown, 6; Chapelizod, Desert Court, 4; Kilfane, Lyrath, Mullinabro, Snow Hill.

Carlow. - Ballykealy (large), Borris, 12; Kilconner, 12; Oak Park, 14.

Wexford. - Artramon, Ballycross, 9; Bargy Castle, 17; Butlerstown, 30; Castleboro, 10; Courtown, Kilmannock, 6; Macmine Castle, 20; Merton, 4;

Rosemount, Rosslare, 49; Saunderscourt, 30; Stokestown, 6; Taghmon (beech-wood), Tintern, 12.

Wicklow. - Ballinglen (large), Ballynure, Ballyward, Blessington, 4; Donard, 6; Glenealy, Grangecon, 12; Kilmacurragh, 4; Kiltegan, 20; Laragh, 5; Lisheens, 4; Luggala, Powerscourt Demesne, 14; Powerscourt Deerpark, 4; Russborough, Stratford (Saunders Grove), 10; Tankersley, 8; Woodstock, 5.

Dublin. - Malahide Castle, New-bridge, 18.

Kildare. - Oldtown, Carton.

Queen's co.- Abbeyleix, EmoPark, Kellyville, 20.

King's co. - Ballinaminton, 10; Charleville, 8; coole, 9; Gloster, 20; Green Hill, 4; Parsonstown, 15.

Longford. -Castle Forbes, 8; Derrycassan, Edgeworthstown, Erne Head, Mosstown House.

Westmeath. - Ballynagall, 5; Baronstown, 30; Hyde Park, 6; Clonlost, 9; Cromlyn, 14; Deerpark, 5; Mear's Court, 4; Moninstown, 5; Higginstown, 5; Rockfield, 20.

Meath. - Arch Hall, Drewstown Lake, 20; Lagore, Swainston.

Louth. - Beaulieu, 24; Bellurgan, 10; Corballis, 15; Dunleer (large), Rokeby.

Galway - Castlegrove, 4; Garbally, 20; Garumna Island (lakes), Glenturkan, Gowla Lake, Lettermuckoo (upperlake), Lismore Loughanillaun, Lough Athry, Lough Bolard, Lough Boliska, Lough Cutra, Lough Naweeclaun, Lough Pibrum, 20; Monivea, 4 to 6; Mount Bellew, 12; Mount Shannon, Muckanagh (lake), Portumna Castle, 8; Rinvile (Oranmore) 30; Tully Lough, 3 or 4.

Roscommon. - Castle Strange, 6; Carraroe, 15; Johnstown, 4; Lough-glinn, Lough Key, Mote Park, 8; Thomastown, Strokestown.

Mayo. - Ballinamore, Bellmullet (cliffs near), Castlemagarret (large), Loughafinna, Lough Carrowmore, Lough Mask (island near Glantreague), Lough Tawnyard, 9; Milford, 20;

Newport House, Old Head House, 10; Ross Hill (large), Westport Demesne, 20 to 30.

Sligo. - Annaghmore, Fortland, Hazlewood, 20; Hollybrook, Moy-view, 13; Newpark, 6; Tanrego, 30; Templehouse.

Leitrim.- Cullinboy Lake, 4; Lake-field, 5; Lough Rynn, Meenaphuhill Wood,4.

Cavan. - Farnham, Lough Ramor.

Fermanagh. - Castle Archdall, Inishfovar (Lower Lough Erne), Upper Lough Erne (islands), 20.

Monaghan. - Castleblayney, Coolderry, 12; Dartrey (large), Lough Fea, Mount Louise.

Armagh. - Castle Dillon, 20; Drumbanagher, 25; Lough Federnagh, 10.

Down. - Castleward (large), Clandeboye, 6; Drumantine, 30; Finnebrougue, 15; Greyabbey, Mourne Park, Mount Panther, 6; Mount Stewart (large), Narrow Water, 21; Portaferry, Rostrevor Mountain, 4; Tyrella South, 20.

Antrim. - Ballyscullion, 4; Glynn (large), Magheramore (large), Park Mount, 20; Shane's Castle, 30 to 40.

Londonderry. - Bellarena, 40; Boomhall, 4; Carrickhugh, 20; Knockan, 5; Walworth, Willsborough, 4.

Tyrone. - Augher Castle, Baronscourt, 4; Caledon, Rash Wood, 6.

Donegal. - Ards (large), Ashfield, Ballymacool, Boyoughter Lake, Camlin, 4; Carralena, 5; Castle Grove, Castle W ray, Clonleigh, 16; Cratloe Wood, 6; Donaghmore, Doohulla, Dunlewey, 5; Dunmore and Carrigans, Fahan, Fort Stewart, 30; Glengollan, 10; Inver River, 6; Kilderry, 14; Lough Aderry, Lough Alickmore, Loughanillanowenamarve, 30; Lough Anna, Lough Derg (Kelly's Island), Lough Derryduff, 15; Lough Lack, Lough Veagh House, Malin Hall, 7; Mountcharles, Oakfield, Port Hall, Salt pans, 10; Wood Hill.

THE PURPLE HERON.

Ardea purpurea, Linnaeus.

Has once occurred.

The only specimen recorded a Irish was announced by Thompson in the "Proceedings of the Zoological Society" (1834, p. 30). It was stated to have been shot at Carrickmacross in the south of co. Monaghan, and it still exist in the Science and Art Museum, Dublin; from it occipital crest and elongated plume at the base of the neck and scapulars this bird appear to have been adult (Mr. A. R. Nichols).

THE LITTLE EGRET. *Ardea garzetta*, Linnæus.

Three instance from Kerry, Cork, and Wexford are on record, but none in recent times.

This is another species for the occurrence of which in Ireland we must refer to Thompson. The first was presented to Trinity College Museum, in December 1788, by Rev. J Elgee, Wexford, and that museum till contains a Little Egret, with crest, and plumes on the breast and back. Templeton mentioned a second specimen, shot in Cork Harbour in 1792, as being "in the Dublin Museum," and from Harvey's "Fauna of Cork" we learn that the museum named was that of the Royal Dublin Society. A third example, obtained in Kerry in a fatigued condition, was recorded many years before Thompson wrote by Dowden, who received it for the Cork Institution. The two latter specimens have disappeared, and all that can be said about the Trinity College bird is that it bears the "Yarrell" label used for the Irish Collection by Ball; as however some specimens there, which cannot be Irish, bear that type of label, and none have any data (except the Great Auk), it cannot be proved that this is the Wexford bird. As we have now no Irish example of the Little Egret to identify, and as other small Herons have so much white in their plumage, we cannot say that all the above were correctly determined. The counties mentioned have been marked by the occurrence of many other rare birds of the Heron family.

THE SQUACCO HERON. *Ardea ralloides*, Scopoli.

Rare visitor in summer and autumn, chiefly to the south coast.

There are eight notices of the occurrence of this little Heron including Thompson's record, and seven of these relate to the counties of Kerry, Cork, and Waterford. The earliest instance took place in the end of May, and the latest on the 24th of November. They were distributed thus: Kerry 2, Cork 4, Waterford 1, Londonderry 1; none from any inland county. In seven cases the months are mentioned; -May 1, June 1, July 1, September 2, October 1, November 1, and the eighth specimen was said to have occurred in summer.

Kerry. - One was shot on 10th June 1875, on the River Laune, by Mr. Arthur Bowles, Temple Court, Guildford, who preserved it; it had been seen about the place for sometime previously, and exhibited but little fear (*Zool.*, 1877, p. 57). A young male "in the second year's plumage, was shot at Waterville, on 17th September 1895; its stomach was filled with remains of small crustacea (Williams, in *Irish Nat.*, 1896, p. 56).

Cork. - The first Irish specimen on record was obtained on Killeagh Bog, on 26th May 1849, and preserved by Moss (Thompson, II., p. 158); Mrs. Moss has lent it in recent years to the Dublin Museum. Another Squacco Heron was shot on the bog behind Ballycottin strand in the summer of 1850; Moss preserved it for the Rev. J. W. Hopkins, who sent it to a friend in France. A third, from the same part of the county, was shot on a lake in Castlemartyr Demesne, on 26th October 1860 (Proc. Dublin N.H. Soc., 3rd June 1864, p. 183); it is now, marked "Youghal," in the Dublin

Museum. A female was shot on the 15th July 1877 beside a lake at Castle Freke, near Galley Head, and is preserved at Castle Bernard, Bandon; its ovary contained eggs the size of ordinary shot. I am informed by Mr. E. Williams, who preserved it, that this was the bird announced as a King's County specimen in the *Field* (4th August 1877) and in the *Zoologist* (1877; p. 388); there is also a Castle Bernard in that County, and the confusion arose from this circumstances.

Waterford. - A specimen was shot at Ballynacourty, on Dungarvan Bay, on 12th September 1896, and is in the collection of Mr. Barrington; it doubtless belonged to the same flight as the Waterville specimen, shot five days later in Kerry.

Londonderry. - A young bird, believed to be a female, was shot on a small bog, two miles from Londonderry on 24th November 1881, (*Field*, 8th July 1882).

THE NIGHT HERON. *Nycticorax griseus* (Linnæus).

Rare and irregular visitor, a large proportion of the birds being immature.

More than twenty Night-Herons have been recorded since 1834, only one of which can be assigned to the West of Ireland; and thirteen of these were immature. Of the above, seven were obtained in Cork, a county in which so many rare birds of the Heron family have been taken; and from the dates which are forthcoming it seems that some examples occurred on the spring migration, and others from August to January; while in October and November 1865 one was shot in Cork, a second in King's Co., and a third in Dublin.

Cork. - An adult male was shot at Castle Freke, previous to 1845, by the Rev. J. Stopford ("Fauna of Cork," p.12). An immature male was shot in a bog a few miles from Cork, on 13th October 1865 (Hackett, in Field, 21st October and 2nd December 1865) Another immature bird, taken alive on board a steamer near Cork Harbour in May 1873, was presented by Harvey with his collection to Queen's College, Cork. A specimen was shot at Doneraile on 16th May 1877, according to Mr. F. R. Rohu, who preserved it. An adult bird was obtained for Lord Shannon on his estate near Youghal in the winter of 1878-1879 (Mr. F. R. Rohu). An immature specimen was obtained on the Blackwater near Fermoy by Mr. F. Lucas, in March 1894 (*Zool.*, 1896, p. 382). A male was shot at Shanagarry, on 31st May 1899 (Mr. W. B. Barrington).

Kilkenny . - A young male was captured at Silverspring, and sent to the late Dr. Burkitt on 1st November 1854; he preserved it.

Wexford. - An adult male, with a long white crest, was shot at Killynick on 21st April 1899, and is now in the Science and Art Museum, Dublin.

Queen's Co. - An immature bird, said to have been obtained in Queen's Co, was purchased by Ball for Trinity College Museum (Thompson, II, p.173). That Museum now contains an adult Night-Heron with the "Yarrell" label.

King's co. - An immature male was shot at Castle Bernard, on 16th November, 1865, and preserved at Brittas, Queen's Co. (Proc. Dublin N.H. Soc 1st December 1865)

Dublin. - An adult female was shot near Clondalkin, on 8th November 1865, while perched on a hawthorn, and permitted of approach within

fifteen yards; its stomach contained remains of shrimps and water beetles (Ibid). An immature specimen was obtained in Bullock Harbour, in August 1876, and is preserved at Beechwood, Dalkey. Another immature bird was shot in a quarry at Rathgar on 31st December 1888, and its stomach contained frogs. (*Zool.*, 1889, p.110)

Louth. - A young male, approaching maturity, was observed, after a gale from the east, to frequent the reedy margin of a lake, and was killed at Beaulieu on 1st May 1848. It passed with the Montgomery collection into the Dublin Museum.

Monaghan. - A young male was obtained at Inniskeen in January 1855, and is still in the Belfast Museum (*Zool.*, s. s., p. 5429 [1857]).

Mayo. - One of the specimens of which Thompson was informed by Glennon was said to have come from Westport (Thompson, II., p. 173, note).

Armagh. - A specimen in the first year's plumage was shot between 1834 and 1838 near Tollbridge and presented to the Belfast Museum (Thompson, II., p. 173).

Down. - A bird of the year was obtained in the People's Park, Belfast, apparently in September 1866 (*Zool.*, 1866, p. 457); it passed into the collection of Mr. H. Blake Knox. Another young bird in spotted plumage was shot in the People's Park on 26th October 1893 (*Zool.*, 1893, p.459).

Donegal. - One which Thompson saw with Glennon, the taxidermist, in March 1834, was said by the latter to have come from Letterkenny. Beside the above, one or two more unrecorded instances are mentioned by Thompson, and some four others by Sir R. Payne-Gallwey.

THE LITTLE BITTERN. *Ardetta minuta* (Linnæus).

Rare and irregular visitor in spring, summer and autumn.

The Little Bittern has been recorded in Ireland on some thirty occasions, from March to November, chiefly in the southern and eastern maritime counties; but occurrences have been noted in the midlands, and one in co. Galway, the only western instance. Several adult males have been obtained, but many of the birds have been immature.

A male was kept alive by Captain Poe, near Nenagh, and its characteristic attitudes were watched. When unconscious of observation it would walk about the cage with neck retracted, the head resting on its shoulders, or, if minnows were placed under its perch, it would shoot out its long neck, reaching down and capturing them with dexterity; but when approached it used to stand still and begin to elongate itself slowly, and while it stood previously about ten inches high, it now assumed a height of sixteen or more; its bill was then pointed upwards, its eyes being directed straight towards the intruder, and its neck and body stretched and compressed. In this position it looked so unlike a bird, that visitors, standing a few feet from it, have asked where it was. Its croak was represented as resembling the word "grack" (Dr. Morton).

Kerry. - One was said to have been shot in 1831 or 1832 (Thompson, II., p. 159).

Cork. - An adult male was shot at Woodside in the summer of 1842, and with another, also obtained by Harvey, is in Queen's College Museum. One was killed by the Rev. Joseph Stopford previously to 1845 ("Fauna of Cork"). One shot near Youghal was preserved by Moss before 1858. An immature bird was picked up dead, having been chased by a hawk in a bog near Youghal, and exhibited on 3rd June 1864 before the Dublin Nat History Society. A female obtained near the Bandon River on 6th June 1868 is preserved at Longueville (*Field*, 20th June 1868). One was shot near Rathcormack in 1869 or 1870 (*Field*, 23rd October 1875). An immature specimen was taken on a steamer near Cork on 20th May 1873 (Harvey). A male, killed with a stick near Passage, on 30th March 1897, is in the collection of Mr. Barrington. Another was obtained near Skull on 8th November 1897 (*Irish Nat.*, 1898, p.51). One, labeled "Youghal," is in the Neligan collection, Tralee; it appears to have been preserved by Messrs. Williams & Son.

Tipperary. - Captain Poe's specimen, an adult male, was caught near Nenagh on the 19th April 1891 (Land and Water, 16th May 1891).

Wexford. - A Little Bittern was obtained on the Tuskar by Mr. Henry Williams probably in the "seventies." An adult male was shot on the River Slaney on 26th April 1870 (*Zool.*, s. s., p. 2224 [1870]). Another adult male, now in the Dublin Museum, was caught by a dog on Drinagh bog on 2nd October 1887. A fourth Wexford specimen was killed near Taghmon some time in 1897 (*Irish Nat.*, 1898, p.152).

Carlow. - One was shot on the narrow at Carlow on the 19th May 1895 (Land and Water, 1st June 1895).

Dublin. - A bird of this species was obtained at Merrion some years before 1837 (Thompson, II., p. 160); more than one was stated by Glennon to have been killed in the marsh at Sandymount (*Ibid.*). Mr. H. B. Rathborne informed me in 1894 that he had an old record of one shot by his uncle on the Tolka River. A specimen, shot at Skerries, was presented to the Science and Art Museum; Dublin, by Mr. E. J. Johnston, but it bears no date.

Louth. - A Little Bittern was shot by Montgomery on a bog between Newry and Dundalk (possibly in Armagh) about 1st May 1849 (Thompson, II., 160); this, or another, was referred to by Montgomery as having been seen by him fresh killed in co. Louth (Proc. Dublin N .H. Soc., 3rd June 1864).

Westmeath. - An adult male, shot in the district, is preserved at Glynn-wood, Athlone.

Longford. - A specimen obtained in this county, about 1833, was in the collection of T. W. Warren (Thompson, II, 159).

Galway. - One was shot as far west as Galway previous to 1853 (Watters, p. 137).

Armagh. - The first recorded from Ireland was shot in co. Armagh in November 1830 (Thompson, II p. 159).

Antrim. - Thompson tells us of one supposed to have been shot at the "Bog-Meadows," Belfast. Glennon mentions, without locality, a Little Bittern preserved between 1st August 1874 and the date of notice (*Field*, 20th February 1875); while Sir Ralph Payne-Gallwey states that he twice shot examples of this bird ("Fowler in Ireland," p.251).

THE COMMON BITTERN. *Botaurus stellaris* (Linnæus).

Scarce and irregular visitor, though probably occurring annually; formerly resident and then not uncommon.

Like the Buzzard, the Bittern has ceased within the nineteenth century to breed in Ireland, but whereas the former apparently continued to do so down to the "eighties," and its breeding-range was confined to Ulster, we have no record of the latter species nesting later than about 1840, though it was resident early in the century in Munster, Connaught and Ulster. Its Irish name, "Bunnan," is found in names of places in various counties. In

Cork Mr. Smyth, of Rathcoursey, informed me that his father when young used to hear Bitterns on a bog there, long since drained. An old man in co. Waterford told me in 1856 that in his youth he used to hear the sound made by these birds, near the confluence of the Blackwater and Bride, before the lowlands were embanked, and that the birds bred there. In Tipperary a female was shot off her nest, with unfledged young, near Killenale, early in August a few years before 1842 (Thompson, II., p.163). In Eastern Galway the late Lord Clonbrock told me of the Bitterns he used to meet with regularly on Crit Bog from 1819, the first year he began to shoot, until about 1830; up to 1845, or thereabouts, they were seen there at intervals, but always in pairs, and since then a single bird only has been met with occasionally. Lord Clonbrock described how they used to annoy the grouse-shooters by running for hundreds of yards and puzzling the dogs. At Mantua, co. Roscommon, the late Oliver Grace, in the "forties" or earlier, used to caution sporting visitors "not to shoot the Bitterns," which then bred there. At the base of Nephin, co. Mayo, a farmer, who had lived there for seventy years, told Mr. Hart in 1882 that he remembered when Bitterns, like bulls, answered one another over the moors. They were "plenty enough" early in the century on the low-lying lands about Upper Lough Erne, according to old residents. Mr. W. Sinclair, an aged ornithologist, informed me that, in his youth, he used to hear a noise on summer evenings which he was told was from a Bittern; the locality was an extensive swamp between Strabane and Londonderry, and he said that the bird was not uncommon then and bred in Donegal. About the same time, 1820, the booming sound used to be heard near Dungiven, co. Londonderry (Thompson); while in the previous century Bitterns were common in the Lower Arda, co. Down (Harris and Smith, 1744); Rutt also, 1772, enumerated this species among the birds of Dublin.

Within the last half century at least, the Bittern has become a straggler from other lands, and the only locality I can name, where it occurs on an average about once a year, is the marshes of Lord Castletown's property in Queen's County.

Since it ceased to breed in Ireland the Bittern has been an irregular winter visitor in very small numbers, occurring from time to time in almost every Irish county; but the number of records for Cork (36) is much in excess of those for Waterford (22) and Down (21), which supply the next largest numbers; Wexford affords eight, Roscommon and Donegal seven each, other counties fewer, and from Leitrim, Cavan and Londonderry no notices appear. We have included Thompson's records, and Bitterns were more numerous in his time than they have been recently, but certain seasons bring more of these birds than others; thus Thompson cites the winters of 1830-31, of 1844-45, and of 1848-49 which were specially marked by their occurrence. In 1850-51 eight, and in 1855-56 nine Bitterns were shot in different counties, while in the winter of 1874-75 eighteen occurred, of which twelve were obtained in various parts of Cork within about a month, ending 9th January 1875.

Reviewing the months in which 105 Bitterns have been recorded, the following results are obtained:- August 2, September 2, October 3, November 11, December 37, January 27, February 13, March 10, and none between March and August. This shows that before November the occurrence of the bird is exceptional, and that it is most frequent in December and January. It is singular that a species whose breeding-range is eastern and southern rather than northern should not appear usually in October, but chiefly in midwinter, when we might expect the autumn migration to have ceased.

THE AMERICAN BITTERN. *Botaurus lentiginosus* (Montagu).

Very rare, accidental visitor, chiefly in October and November.

The American Bittern has been obtained eleven times in Ireland, the instances being scattered through Munster, Leinster and Ulster, but none have occurred in Connaught nor in any western county. It is remarkable that four should have been taken in Leinster, and five in inland counties, far from where we might expect they would have landed from America; and still stranger is it that two should have been shot in Maddenstown Bog, co. Kildare, at an interval of more than a year. Three occurred the same season in co. Cork, while in October 1889 one was taken in Kildare and one in Londonderry. Four were killed in October, four in November, two in December, and one in February:- months which, as Mr. Howard Saunders remarks, coincide with the birds migrations. This species has visited Ireland more frequently than any other from America, if we exclude the Greenland Falcon as not coming from America proper.

Cork. - An immature specimen was obtained near Myross Wood, Glandore, early in October 1875

(Harvey, in Field, 18th December 1878). An adult, now in Queen's College

Museum, was killed on Annagh Bog, near the Kinsale Junction, on 25th November 1875 (Ibid.). Another was obtained between Youghal and Cork in December 1875 (Editor's note, *Field*, 10th November 1883).

Tipperary. - One is stated to have been shot while walking among evergreens at Garryroan, Cahir, on 31st October 1870 (*Zool.*, s. s., p. 2408 [1870]).

Wexford. - One is recorded to have been killed by Captain Doyne, in co. Wexford, in December 1862 (Proc. Dublin N.H. Soc., 10th April 1868).

Kildare. - One was shot on Maddenstown Bog on the 81st of October 1889, and is now in the Dublin Museum (Scharff, in *Zool.*, 1890, p.26). Another bird, a female in fair condition, was shot, also on Maddenstown Bog, shortly before 20th February 1891 (Williams, in *Zool.*, 1891, p.218).

Louth. - A female was shot near Castlering on the River Fane, on the borders of Louth and Monaghan, on the 18th November 1868, and was presented by Lord Clermont to the

Dublin Museum (*Zool.*, s. s., p. 1517 [1869]).

Armagh. - The first on record, still preserved in the Belfast Museum, was shot near the town of Armagh on 12th November 1845; its stomach was empty, but it was very fat (Thompson, II, p. 169).

Down. - A male was shot in a bog near Ballynahinch, on 1st November 1883, and is in the collection of Mr. H. Blake Knox (*Field*, 10th November 1883).

Londonderry. - Mr. Robert Patterson has recorded a specimen shot on Ballyronan Moss, near Magherafelt, in the end of October 1889 (*Zool.*, 1890, p. 24). The Museum of Trinity College, Dublin, contains a specimen with the "Yarrell" label. A specimen entered in the books of Messrs. Williams & Son as received from Tullow, co. Carlow, was brought from America. Unfortunately I had not asked them about the entry when I informed Mr. Howard Saunders that this species had occurred in Carlow, as appears in his Manual.

Family CICONIIDÆ.

THE WHITE STORK. *Ciconia alba*, Bechstein.

Extremely rare and accidental visitor.

The allusions of Giraldus Cambrensis (1183-86) to Storks in Ireland are as follows: "Storks are very rare throughout the island, and their colour is black" ("Topography of Ireland," Part I., C. XIV.); however, in the same chapter he tells us that "throughout the winter they harbour about the beds of streams." A MS. of Giraldus in the British Museum (Key 13, B. VIII.) is illustrated at this chapter by a heron-like bird with long plumes on the head, breast and over the tail; its upper parts are dark brown, and it is white beneath, with red legs and feet. In his "History of the Conquest of Ireland," Chapter XII., Giraldus represents Dermotus, Prince of Leinster (Dermot MacMurrough), as having written: We have watched the storks and the swallows; the summer birds have come, and are gone again," &c. Thus the references of this ancient writer tantalize us by their discrepancies, and leave us at a loss to know what his "black" Storks were. It might be suggested that they were Cormorants, if he had not spoken of their frequenting the beds of streams.

In recent times only three specimens of the White Stork are known to have been obtained. The first, shot in the neighbourhood of Fermoy, about the end of May 1846 (Thompson, II, p. 175), is now in Queen's College Museum, Cork; two others were said to have been seen with it; Watters mentions (page 138) a second Stork as having been obtained near the sea-shore in "Wexford during the autumn of the same year as the last, 1846. A third was killed near Hop Island on the Lee, co. Cork, by an engine-driver named Reed, on 7th August 1866 (Hackett, in *Field*, 22nd September 1866).

In the *Field* of the 27th April 1895, Mr. John W. Young gives a detailed description of another White Stork, which he says he saw on the wing between Athy and Stradbally in the Barrow Valley, on the 20th of that month.

A White Stork in Trinity College Museum bears the "Yarrell" label used by Ball, but not exclusively, for his Irish collection.

THE GLOSSY IBIS. *Pelagdis falcinellus* (Linnæus).

Rare and accidental visitor, occurring chiefly in October and November.

There are twenty-two or more records of the capture of this bird in various parts of Ireland, from Kerry to Antrim, including some midland counties; but only one instance, which took place in Clare, can be given from beyond the Shannon. As might be expected, the southern counties of Kerry, Cork, Waterford and Wexford have each several records, but it is strange that North-West Leinster should have been visited, and especially the small county of Longford, where Ibises appear to have occurred in four seasons; two instances from Antrim can also be named.

Thompson mentions specimens said to have been killed in Wexford in the summer of 1818, which was very warm; but of the cases in which dates have been given, we find that but one Ibis occurred in September, ten in the two months of October and November, and one in January; while there are no records for any other month. In the late autumn of 1840 examples were obtained in Wexford, Dublin, King's Co. and an unnamed locality, but the most recent record is that of Sir. R. Payne-Gallwey, who wrote in 1882 that he had notes of five shot within a few years ("Fowler in Ireland," p. 238). Since then we have not heard of an Ibis in Ireland, and, considering the fact that Thompson could name eleven instances, the increasing rarity of this wanderer seems to be evident. In several cases small flocks were met with, and Thompson states that the greater number of the captures he records were birds of the year.

Clare. - The collection of E. Burton Eyre, of Clifden, contained a specimen "captured about the Burren" (Proc. Dublin N. H. Soc., 1st May 1857, p. 55).

Kerry. - One was killed at the Spa, Tralee, in January 1865, and another at Derrymore, also near Tralee, in October 1872; both specimens are in the Neligan collection in Tralee, the catalogue of which contains these particulars.

Cork. - Sir R. Payne-Gallwey stated that he had notes of eight seen together on the Blackwater, evidently a long time before he wrote. Two, killed in co. Cork many years before 1850, were sent to the Museum of the Royal Dublin Society (Thompson, II., p. 182). Five were seen and one shot near Ballymacoda, in October or November in the "seventies," by Mr. John O'Keefe.

Waterford. - One was shot at Dromana in the middle of November 1834 (Thompson, II., p. 182); another was killed near Dungarvan before 1850 (Ibid.), and passed in the Warren collection to the Dublin Museum.

Wexford. - Several were stated by Wheelock to have been obtained in the summer of 1818 (Thompson); two were sent to Glennon from Enniscorthy at the end of October or in November 1840 (Ibid.); two others were killed in co. Wexford that season, and passed from the Dublin N. H. Society to the Dublin Museum (Ibid.).

Dublin. - One was obtained at Balrothery, in October or November 1840, and was acquired in the same way by the Dublin Museum (Ibid.); and Mr. H. Blake Knox stated that he met with another on the Muglin Rock, Dublin Bay, on 15th November 1864, but did not procure it (*Zool.*, p. 9452 [1865]).

King's Co. - A Glossy Ibis was obtained in this county in November 1840 (Thompson).

Westmeath. - One was shot at Tobergill by the late H. C. Levinge, on the 5th October 1851 (Knockdrin game-book), probably a bird of the same flight as the co. Longford specimen, killed the same season.

Longford. - Seven were stated by Glennon to have been sent him from co. Longford in three different years previous to 1833 (Thompson); one was killed on Lough Dun, about 20th November 1851 (Powys, in *Zoologist*, p. 3477 [1852]).

Antrim. - Templeton mentioned one as having been shot in the bog-meadows near Belfast on 30th September 1819 (Thompson); another was shot out of a flock of six near Bushmills in autumn, 1853, and was preserved by Mr. W. Dogherty (Ball, in Proc. Dublin Univ. *Zool. Assocn.*, 4th March 1854). A specimen, of which Thompson got no particulars, was sent to Glennon in 1840; and probably some or all of the five "shot within a few years" of the publication of the "Fowler in Ireland" are additional to those mentioned in the above list.

THE SPOONBILL. *Platalea leucordia*, Linnæus.

Rare and irregular visitor, occurring in the maritime counties, chiefly in autumn and winter.

Of the members of the Heron family, which, unlike the Bittern, have not bred here in modern times, the Spoonbill has occurred most frequently; some thirty-three instances being forthcoming, while in several of these cases small flocks were seen.

There is no record from any inland county, and in nearly every case the birds were met with on the coast. The distribution was as follows: Clare (1), Kerry (5), Cork (12), Waterford (2), Wexford (4), Wicklow (1), Dublin (2), Louth (1), Galway (1), Mayo (1), Antrim (1), Donegal (2). Thus the four southern counties, Kerry, Cork, Waterford and Wexford, yielded twenty-three, or about 70 per cent of the entire; Cork, the great Heron county, having twelve records; while only two appear for the whole Province of Connaught, and three for Ulster. Nineteen instances have occurred in the several months as follows:- February 1, March 1, April 1, May 1, July 1, September 2, October 2, November 7, December 3. The valley of the Cork and Youghal railway has harboured six Spoonbills at different times, besides many other rare birds.

Clare. - A Spoonbill shot in this county some time ago by Mr. C. Heaton Armstrong is in the Paterson collection at Corofin.

Kerry. - Three were shot out of a flock of five near Dingle in February 1832 (Thompson, II., p. 179). Two were seen and one, an immature bird, shot near Castlegregory in November 1846 (Ibid.); another was killed on Valentia Harbour on 12th November 1885 (*Zool.*, 1885, p. 73). An immature specimen was obtained near Derrynane, on 27th September 1889, by Mr. O'Connell (*Field*, 5th October 1889); and another was shot at Tarbert about the 4th November 1889, which is preserved at Tarbert

House (Williams, in *Zool.*, 1889, p. 455).

Cork. - Three were seen together, and one shot, near Youghal in autumn 1829 (Thompson). One was killed close to the town of Youghal on the 30th November 1843 (Ibid.); another, in the same Greenmount (J. II. Darling). A Spoonbill was obtained near Carrigtohill the last week in April, about 1864 (Mr. J. J. Smyth). One was described to me by Mr. J. O'Keefe, of Ballymacoda, a shot by him there, early in September 1863 or 1864; and another, shot on the bog south of Youghal, was sent to Mr. Rohu for preservation within 1885-87.

Waterford. - One or two killed at Dromana were seen there among birds shot by the gamekeeper between 1830 and 1850 (Thompson). One was shot near Tramore on 5th November 1891, and shown to me by the owner, Mr. Bor (*Field*, 21st November 1891).

Wexford. - Seven are said to have in the winter of 1835-36 (Thompson). Poole saw a Spoonbill several times on the south coast in July 1840 (Ibid.). One was shot on the Lake of Ballyteige on 12th November 1844 (Ibid.). A beautiful adult bird was killed near Fethard on 7th May 1844 (White, in *Zool.*, 1884, p. 342).

locality, shortly before 25th August 1845 (Ibid.); again, an immature Spoonbill was shot near Youghal on 8th October 1845 (Ibid.). Harvey knew of one shot in co. Cork in 1859 (Proc. Dublin N.H. Soc., Is, February 1860). A flock of four were met with on a marsh near the Bandon River below Inishannon early in December 1860, one was obtained, which is now in the Dublin Museum (Ibid.); while a second out of this flock was shot by a Mr. Quin (Ibid.); another Spoonbill was killed about the same time by the late Thomas Hungerford, of Clonakilty, and is also in the Dublin Museum; the three last-mentioned birds were immature males (Ibid.). Another preserved by Miss Hungerford at the Island, Clonakilty, was mentioned to me in 1881 as having been shot in that locality many years before. Two other old specimens were seen in 1883 at

Wicklow. - A bird of this species was shot, at a little lake, a quarter of a mile from the shore, about the middle of October 1844 (Thompson).

Dublin. - A female, accompanied by a second bird, was shot on the strand near Swords on 26th November 1841 (Ibid.). Mr. H. Blake Knox wrote that he approached near to four Spoonbills which alighted, much fatigued, on an isolated rock, by the shore, on 10th March 1864 (*Zool.*, p. 9211 [1864]).

Louth or Meath. - One was killed at the mouth of the Boyne about 1854 (Proc. Dublin N.H. Soc., 1st February 1861).

Galway. - A Spoonbill was received by Messrs. Williams and Son for preservation from Galway on 16th December 1890.

Mayo. - One was shot at Westport in 1854 (Proc. Dublin N.H. Soc., 1st February 1861).

Antrim. - The first recorded from Ireland was killed at Ballydrain Lake, near Belfast, about the beginning of the century (Thompson).

Donegal. - One was said to have been killed in co.
Donegal in the winter of 1837-38 (Ibid.); another

near Dunfanaghy about 1850 or 1851 (Sinclair)

Order ANSERES.

Family ANATIDÆ.

THE GREY LAG-GOOSE. *Anser cinireus*, Meyer,

Local winter-visitor to parts of Eastern Leinster and the Lower Shannon, rare in most counties,

This species is supposed to have been referred to by Ruttie as breeding in Leinster, when he wrote under the head of "Wild Goose": "There are two sorts, the one a bird of passage. It comes about Michaelmas and goes off in March; but there is a larger sort which stays and breeds here, particularly in the Bog of Allen" ("Nat. History of co. Dublin, 1772"). In the "History of the co. Down" (Harris and Smith, 1744), after a description of the Barnacle and Brent Geese, we are told that the great red bog in the Ards, near Kirkistown, was a particular resort of the "Land Barnacle," and that "in the same place is also found the Great Harrow Goose"; referring to this bog near Kirkiswinn, Thompson tells us that the nests of Wild Geese were robbed there before 1775. Now as the Grey Lag Goose is the only Wild Goose known to breed in the British Isles, it is probable that it was the species which bred in Ireland in the eighteenth century.

A semi-domesticated colony of these Geese exists at Castle Coole, co. Fermanagh, where they were introduced by Colonel Corry, about 1700 (More), and at times there have been over a hundred individuals, but they fluctuate greatly in numbers; Lough Coole, where they are established, is about forty acres in extent, and contains pike which destroy many of the goslings, but Lord Belmore informed me that twenty-three of these came to maturity in 1892.

The best-known resorts of Grey Lag-Geese in Ireland are near the east coast. The marsh lands along the Wicklow shore, known as the Murrough, are visited every winter by a flock of fifty to a hundred, varying according to the severity of the season, and remaining until late in spring. In calm weather they sit in flocks on the sea, about 300 or 400 yards from land, and fly in to feed on the bogs and swampy fields soon after dusk; when the sea is rough they rest on one of five or six well-known fields, where they cannot be approached, but they allow the train to pass within seventy yards without even looking up (A. B. Brooke, in *Zool.*, s. s., p. 2524 [1871]). The late Sir Victor Brooke stated that he had seen hundreds of Grey Lag-Geese and Barnacles in Dundalk Bay, where some winters they are very common, and that both species feed in the day-time on large open meadows and bogs in Meath, where he had often shot them, though this species is most difficult to stalk; there are five from co. Louth preserved at Colebrooke. He considered this to be the commonest Goose on that coast, except the Brent. Mr. Pentland informed me in 1892 that a great many frequented marshy meadows at Aclare, near Ardee, every winter, flying backwards and forwards to the broad sands at Dundalk Bay; the mouth of the Boyne is another favourite locality (More). The Lower Shannon is a special winter resort, for Colonel L. H. Irby informs me that when shooting, below Limerick, during hard frost in January 1867, he killed a good many Grey Lag-Geese, of which he saw more on the Shannon banks than of any other species, though there were both Bean and White-fronted Geese about in some numbers at the time. Sir R. Payne-Gallwey also says: "From four to five hundred Grey-lags have, during present memory, frequented annually throughout the winter certain low-lying lands that border the estuary of the Shannon below Limerick. I have made many shots at them with the stanchion-gun, and have even known fowlers to kill, in this fashion, forty to fifty at one discharge" ("Letters to Young Shooters," 1896, p. 66, foot-note). Mr. E. Williams also informs me that on one occasion he saw two dozen of these Geese at a poulterer's in Dublin, obtained on the Shannon by a punt-shooter.

This Goose does not appear to be a regular visitor to other parts of Ireland besides those mentioned above. Everywhere else it is much rarer than the White-fronted species, and occurs irregularly and in small numbers, chiefly in hard winters; but under these conditions it has been taken, in many cases repeatedly; in all quarters of the country except the south-eastern counties of Waterford, Kilkenny, Carlow, and Wexford, from which I have no record of it. The bogs of King's and Queen's Counties seem, indeed, to yield more notices of this bird than most districts, but it has been obtained in Kerry and Cork, in the counties of Connaught, and in Fermanagh, Donegal and Antrim in Ulster, though it seems to be very rare in the latter province.

THE WHITE-FRONTED GOOSE. *Anser albifrons* (Scopoli).

A regular and often an abundant winter-visitor to the great bogs, in all the provinces.

The White-fronted Goose is the commonest "Grey" Goose which visits Ireland, and is more frequently seen in the Dublin markets than all the other wild Geese put together; while descriptions from all parts of the country identify it by its black-barred breast. It is very widespread, and is a regular winter-visitor to Western Kerry, localities in Cork, and the red bogs of Tipperary, Kilkenny, Queen's Co., King's Co., Westmeath, Galway, Roscommon, Mayo, Sligo, Donegal, and parts of Down and Antrim; the callows, or marshy meadows, of the Shannon, the Suck and the Barrow, and the islets of several lakes, are also favourite resorts. This species frequents the Midlands, e.g., King's and Queen's Counties, even more than counties near the coast. Kinahan has counted 250 in a flock feeding on the river-flats of the Little Brosna in co. Tipperary; the Geese come to their grassy feeding-grounds about 10 A.M. and if not disturbed remain until 2 P.M. or 3 P.M., when they fly off to the bogs, to come back again at midnight, and remain on the callows a few hours; in stormy weather they remain longer on these river-flats (G. H. Kinahan). Mr. Warren has observed that where their feeding-grounds were preserved they left off retreating daily to the bogs near the Ox Mountains, and became so free from fear that they would only fly from one part of a small lake to another, though disturbed three times.

Their numbers are much greater in certain seasons than in others, and, when severe frost and snow drives them from the open bogs, they spread over the cultivated districts in flocks of all sizes; thus in the beginning of 1881 and the following winter various parts of Munster were visited by numerous flocks which alighted on the open fields, and Sir R. Payne-Gallwey mentions that nine of these Geese pitched in the main street of Tullamore to feed on some refuse vegetables. There is probably no county in Ireland which is not visited by wandering bands in severe winters; and when they resort to springs in hard frosts they are sometimes caught with rabbit-traps. Their stay in this country commonly lasts from early in October until late in April, but excellent observers in various localities have recorded them in September and in May, and on Lough Swilly sometimes until the third week in the latter month.

An interesting description is given in the Irish Naturalist (1897, p. 222) of a large migration observed early in May, passing over Londonderry from SW. to NE; the hosts of birds, which defied calculation, were composed of Wigeon, Curlew, Plover, and other *Limicola*, with Wild Geese forming the outside columns.

The black bars on the underparts sometimes become confluent; at Baronscourt there is a specimen which has the entire breast and belly black.

THE BEAN-GOOSE. *Anser segetum* (J.F. Gmelin)

Winter-visitor, but not nearly so common and widespread as the White-fronted Goose.

Thompson states that from November until March the Bean-Goose was occasionally brought to Belfast market, and he gives instances of its capture in co. Antrim. He then took it for granted that the flocks of Wild Geese which were seen on the wing were probably to be referred to this species, and others have followed his inference, so that the name "Bean-Goose" has come to be often misapplied.

On the subject of the relative numbers of the Bean-Goose in Ireland, I have recently consulted Sir Ralph Payne-Gallwey, and find myself very much in accord with his present views, as modified by his later experience. When he wrote the "Fowler in Ireland," three very severe winters had occurred, and there is more evidence that it is in such seasons that the Bean-Goose visits Ireland. For instance, there is a specimen in the collection of Sir R. Payne-Gallwey, shot out of a large gaggle on the Shannon; but, as intimated in "Letters to Young Shooters; 1896," he has of late years found the Wild Geese of the Shannon Estuary to be nearly all Grey Lag-Geese, though commonly called "Bean-Geese." A. G. More considered this species to be much less frequent than the White-fronted Goose; and Mr. Edward Williams, who has frequently and for many years examined the wildfowl in the Dublin markets, shot in various parts of Ireland, considers the Bean-Goose to be the least common of the five species which annually visit Ireland. The greater difficulty, however, of shooting it, owing to its extreme shyness, must be taken into account in judging from market-returns. I can answer for its rarity in

co. Waterford, the only specimen I know of having been preserved by Dr. Burkitt in January 1841; and from several counties in Leinster, Connaught and Ulster, I have no record of it, although a few are shot occasionally in western Cork and Kerry. Mr. Warren finds it so rare in his district about Killala Bay that the only specimen he has seen came to his notice forty years ago, though for half a century the ornithology of the north-west has been constantly studied by that most careful naturalist and sportsman.

Montgomery stated that in 1850 he found the Bean-Goose in great numbers in Mayo, but added that the White-fronted was more numerous, in the proportion of five to one; while he noticed that the two species fed together, but in distinct flocks. The Bean-Goose is shot in Connemara, but in decidedly smaller numbers than *A. albifrons*, and on the Shannon, below Limerick, Colonel L. Howard Irby found it stood in the same proportion to the Grey Lag-Goose, when shooting there in January 1867.

Turning to Watters, we find that he says: "The principal and well-ascertained haunts of the Bean-Goose are the bogs of the interior," a statement which I find corroborated at the present day by gentlemen who reside in Queen's County, King's County, Westmeath, eastern Galway, and eastern Sligo, where they consider this goose a regular winter-visitor, though less common than the White-fronted Goose. Mr. Barton includes the counties of Roscommon and Leitrim among those where the Bean-Goose is seen frequently, and the late Sir Victor Brooke stated that it was the common goose of all the north of Ireland. This certainly does not apply to the Lough Swilly district, so remarkable for wildfowl, where this species is rare; but it is frequently seen on Rathlin, where specimens have been obtained repeatedly.

The habit of feeding at night, coupled with its great wariness, renders the Bean-Goose very difficult to observe or obtain, but it must be more numerous in some seasons than others, from the conflict of testimony of men who have shot in the inland counties.

THE PINK-FOOTED GOOSE. *Anser brachyrhynchus*,
Baillon.

Has once been obtained in co. Donegal.

About the 19th of October, 1891, a Pink-footed Goose was shot on Lough Swilly, and was purchased at a poultry-shop in Londonderry by Mr. D. C. Campbell, who presented it to the Belfast Museum (*Zool.*, 1892, p. 30). That month of October was remarkable for what has been called the "Petrel storm," when Petrels of two species were strewn across Ireland, and the first Irish specimens of Wilson's Petrel were obtained; the occasion also brought us a visit from many Grey Phalaropes, and the first Red-necked Phalarope on record.

On the 9th February, 1872, the late Sir Victor Brooke, who was driving, came suddenly in sight of a flock of Barnacles and Grey Lag-Geese, feeding on a large marshy field in Meath, and, on examining them with a telescope, he distinctly saw two birds which he identified as Pink-footed; he stated that they were sombre, dark-headed birds, that the shape, size and gait of the species is characteristic, and that to an experienced eye the pink foot of this species is easily distinguished on the ground.

Wild Geese in flocks have several times been reported from Ireland in July. The clearest description of such an occurrence was given me by Colonel Malone, of Baronston, Westmeath, who stated that when fishing with his keeper on Lough Iron, on the 4th of July, 1892, they saw a flock of forty-seven Geese, which flew towards them until within one hundred and fifty or two hundred yards before they turned away. They were of the same size as the Geese usually seen in winter (White-fronted), but appeared to have slightly shorter necks and seemed to be a little darker in the plumage. They uttered a cry which reminded Colonel Malone of that of the Lesser Black-backed Gull (which is found on Lough Iron). He was quite clear that they were not Ruddy Sheldrakes which visited different parts of Ireland that summer; a species to which it was suggested at the time they might belong (*Zool.*, 1892, p. 334).

In the *Field* (23rd August 1890) there is a notice by P. A. K., Athlone, of Wild Geese which had been observed the third week in July; referring here to his former notice, of eleven seen on 26th August 1881, the writer states that he had then followed them up for some days with a glass.

THE SNOW-GOOSE. *Chen hyperboreus* (Pallas).

Extremely rare visitor on the autumn migration.

The occurrence of the Snow-Goose in Ireland was first made known by Mr. Howard Saunders (*Proc. Zool. Soc.*, 1872, p. 519). This took place on Tacumshin Lake, which adjoins the south coast of Wexford, where two immature specimens were shot, early in November 1871, and identified by him in Leadenhall Market on the 9th of that month; while a third was shot in Wexford Harbour about the same time, but was not preserved.

It appears that an earlier occurrence had taken place in Ireland, for Mr. E. Bidwell has recorded the following facts concerning two Snow-Geese (*Zool.*, 1878, p. 453):- These birds were in the aviary at Knowsley, and on the

sale of the collection in 1851, Mr. Castang, of Leadenhall Market, purchased them, and afterwards sold them to Mr. W. Domville, of Santry House, Dublin. Mr. Castang was informed by Thompson, the superintendent of Lord Derby's aviary at Knowsley, that he had bought them with a third Goose out of a flock of domestic Geese running on a green, when he was travelling in Ireland.

In the *Zoologist*, 1878, p. 419, the Editor, Mr. Harting, records the appearance of seven Snow-Geese, which were seen on marshy ground in Termoncarra, near Belmullet, co. Mayo, about the end of October 1877; one was wounded and used as a decoy, by which a second was trapped. The latter proved to be a gander and was easily tamed; he then assumed the leadership of a flock of domestic geese, taking them long distances in the mornings and returning every evening to the yard where they were kept; he mated with one of them and goslings were reared; but after he had thus lived until April 1884, he was killed with a stone, when the owner, Mr. J. R. Crampton presented the specimen to the Dublin Museum, where it is preserved. The bird that was wounded in 1877 died after six weeks, and was not preserved.

In the end of September 1886 Mr. H. Blake Knox received another specimen from a son of one of his tenants living near Belmullet, who shot it as it flew past his house. Mr. Blake Knox has preserved this bird, and has kindly lent it to me; it is of larger size than Mr. Crampton's specimen in our Museum. It was exhibited by Dr. R. B. Sharpe at the meeting of the British Ornithologists' Club on 22nd November 1899, and proves to be of the larger race, *Chen nivalis* (Forster).

The peninsula of the Mullet, on which the two last occurrences took place, is at the north-west corner of Connaught, and contains famous resorts of wildfowl. Specimens of the Greenland Falcon and Mealy Redpoll have been repeatedly obtained on that part of the coast.

THE BARNACLE-GOOSE. *Bernicla leucopsis* (Bechstein).

Regular, but local, winter-visitor to the coasts and islands of Louth, Donegal, Sligo, Mayo, and Galway.

The only regular resort of this species known to Thompson was Lurgan Green, an extensive marshy pasture, adjoining Dundalk Bay (not to be confounded with Lurgan, a town in Armagh). Sir Ralph Payne-Gallwey was informed that in this locality five hundred Barnacles were seen in the winter of 1880-81, and that up to that time they continued to visit it in large numbers. The late Sir Victor Brooke informed me in 1891 that *B. leucopsis* is in some winters very common in Dundalk Bay, and goes out to feed on flat meadows in Meath every morning with the Greylags. He added that he had shot many of both species, and had seen flocks of two hundred Barnacle together. A far more extensive immigration, which is noticed at Inishtrahull, passes down the west coast of Donegal, and is continued along the coasts of Connaught as far as Connemara and the Arran Islands off Galway Bay, where the proprietor, Mr. Johnston, has described to me the white faces and underparts of the Geese which frequent Brannock Island until the end of April. I found a dead Barnacle in a recognizable state on Frehill Island, off Killary Harbour, and on showing it to Mr. Blake of Rinvyle, he told me that birds of this species are common every winter, not only on the neighbouring islands, but on his pastures near the sea, and Mrs. Blake said she once had nine of them in her larder. The Barnacle-Goose is a visitor to Clew Bay and its islands ("Fowler in Ireland," p. 162), to Keel Bay in Achill, and to the neighbourhood of Belmullet, where Mr. Moran tells me that the sloping fields near Terllioncarragh are annually frequented by at least a hundred and fifty. On Killala Bay Mr. Warren has only once seen this species, but it regularly visits Drumdiffe Bay north of Sligo, frequenting in some numbers the pastures of Lissadell, and Sir H. Gore Booth shot one there which he kindly sent me; the neighbouring island of Ardboline is also resorted to. Coming to Donegal, we find the grass-covered islands of the west coast are frequented by these birds in winter - e.g., Inishduff, Inishbarnog, Roaninish, a flat island about a mile long, Inishilinty, and especially Aranmore, where specimens have been repeatedly obtained, and there Barnacles remain all the winter in flocks of eighty or more, feeding on the banks of grass in the valleys, and on the brow of the cliffs (Migration Reports). The Aranmore lightkeepers, who observe the migration of these Geese every year, say that they arrive sometimes in September, but usually in October, and they are seen passing at intervals, day and night, until the end of the month; they leave by the first week in May. Lightkeepers' reports would be much more useful if they did not make the common mistake of calling the Brent Goose the "Barnacle" as well as this species, though there are a few men who distinguish them.

In eastern Donegal the Barnacle is considered uncommon on Lough Swilly and Lough Foyle, its regular resorts being those wilder parts of the western coast and islands where it can graze in security, for it is not a frequenter of estuaries and mudbanks like the Brent; it seldom wanders far from the sea, and even in the

maritime counties, in nearly all of which it seems to have occurred, it is rare outside its 'established haunts. In Rathlin Island Mr. Patterson only mentions a single instance, but at Portrush Mr. Ogilby recorded about five hundred as having passed on the 14th March 1876 (*Zool.*, s.s., p. 4905 [1876]). Scattered inland occurrences have taken place in Westmeath, Longford, Fermanagh and Armagh, and Sir Henry Bellew assures me that he has seen a small flock of this species in eastern Galway and carefully examined a bird that was shot there. He described the sharp line of demarcation between the black neck and very white breast; while Sir R. Payne-Gallwey mentions the peculiar coughing grunt of the Barnacle, as well as the white patch near the eye and the larger size of the bird as indications which readily distinguish it from the Brent Goose.

THE BRENT GOOSE. *Bernicla brenta* (Pallas).

Winter-visitor, and our most numerous Goose after *A. albifrons*; scarcer in the extreme south.

The Brent Goose, being strictly marine in its habits, must be sought for in the bays and estuaries, where it feeds upon the banks that are exposed by the receding tide; not on grass-lands like the Barnacle. I do not know of any instance of this bird coming far inland. It abounds in Tralee Bay, though it does not resort to the estuary of the Shannon, and though absent, as a rule, from Kenmare River and Bantry Bay, it occurs in hard winters in the harbours of Queenstown, Youghal, and Waterford, in the last of which it was formerly numerous. It frequents – some seasons in large numbers – Wexford Harbour, Dublin Bay, Malahide Estuary, Dundalk Bay, Carlingford Lough, Strangford Lough, Belfast Lough, Lame Lough, Loughs Foyle and Swilly, Drumcliffe and Sligo Bays, and those of Broadhaven and Blacksod. To Killala Bay and the Moy Estuary it only comes on passage, never remaining (Warren); Hare Island, in Galway Bay, and Mutton Island, in Clare, are also spoken of as resorts ("Fowler in Ireland"). In some of the above localities the flocks are described as consisting of thousands, or covering acres in extent, but it is evident that their numbers have greatly diminished since Thompson's time, in Wexford Harbour for example.

Brent Geese begin to arrive in September, occasionally in August, and become much more numerous in October and November. In Dublin Bay the great increase does not seem to take place until January or February; while April is the usual month for the departure of these birds, but some linger on into May; at Malahide it is said that they will go with the first hard east wind, but that if the wind holds from the west they stay a long time.

Thompson records some interesting observations made by him on the aspects, cries, and habits of the flocks of Brent-Geese in Belfast Bay, where he found that they came in to feed at sunrise, and that in the afternoon they all rose to fly out to sea, where they remained for the night. When the frost was so severe as to freeze the banks between tides, they became starved and much tamer, as all Geese do at such times. Sir R. Payne-Gallwey states that, while a flock was feeding, one which acted as their sentinel discovered him as he lay in his punt in a deep channel; it walked slowly back to the; rest, another sprang up and led them off sea-ward. The same writer has seen the sentinel relieved by another, and then commence to feed eagerly.

A coracoid bone of *Bernicla*, found in Shandon Cave, and provisionally referred to the Barnacle-Goose, may possibly belong to the Brent (Lydekker, in *Ibis*, 1891, p.390).

THE WHOOPER SWAN. *Cygnus musicus* (Bechstein).

Rare and irregular winter-visitor to all the provinces, most frequently to Ulster.

This species, according to Mr. E. Williams, occurs in about the proportion of one to twenty-five Bewick's Swans, and is therefore a much rarer bird. The only locality which, as I am informed, it visits in small numbers every winter is Lough Swilly, but it is occasionally found on Lough Foyle (Mr. D. C. Campbell). There are over thirty records of its capture, chiefly in hard winters, in the counties at Kerry, Cork (several), Tipperary, Kilkenny, Wexford, Dublin, Queen's Co., King's Co., Longford, Louth, Mayo, Sligo, Leitrim, Fermanagh, Monaghan, Down, Antrim, Londonderry, and Donegal, the last being richest in records. Though more appear from northern counties, we have here a fair sprinkling all over Ireland, including the extreme south. Sir R. Payne-Gallwey remarks that he has seldom met with a dozen Whoopers together, and the flocks of this species we hear of in recent times are generally small Thus Mr. Digby recognized by their whoop eleven of these birds flying over Geashill on 2nd November 1893, and this is the earliest date in the season I can find, for Whoopers more often come in December and January, with the coldest weather, and they leave in February or March.

Owing to, the difficulty of determining the species on the wing, it is impossible to say that many of the flocks of Swans seen in Ireland, are not Whoopers; but from the fact that these birds have been killed in comparatively few cases, it seems safer to conclude that undetermined examples are of the far commoner Bewick's Swan.

The Whooper is said to weigh twenty-four pounds, and Bewick's Swan about fourteen, while their lengths are five feet and four feet respectively; in the Whooper, too, the expanded wings measure eight feet across, and a far larger proportion of the beak is yellow. When the birds are on the wing their note supplies a criterion; Mr. Warren describes that of the Whooper as being like "whoop, hoo," while he renders that of Bewick's Swan as "hong, hong, ong, ong."

BEWICK'S SWAN. *Cygnus bewicki*, Yarrell.

A regular, sometimes an abundant, winter-visitor to Ulster, Connaught, and part of Kerry; an occasional visitor to the rest of Munster and to Leinster.

We owe to Thompson the discovery that this is the Swan which visits Ireland in the greatest numbers, a fact which all subsequent observations have confirmed. Though an exceedingly fluctuating, and in most places uncertain visitor, there are some lakes near the coast and estuaries where Bewick's Swan may be found more or less every winter. The most southern is Lough Gill, near castle-gregory, on the north coast of Kerry, which was mentioned as frequented by Swans in 1756 by Smith, Who at the same time remarked that they were rare in Cork and Waterford, as they are at present. Dr. Kane informed me that, on the above lake, a number, varying with the season, may be seen every winter, and Sir R. Payne-Gallwey states that three to four hundred remained there during the frost of 1878-79, while in January 1881 there were about eight hundred. Keel Lake, in Achill, is another resort, and so are the lakes of the Mullet in Mayo, which, as the late Dr. Burkitt said, are usually frequented by from fifty to one hundred and fifty, in detached bodies of about five to eight, but in the winter of 1892-93 upwards of a thousand were seen almost daily for weeks on the lake of Cross, and flew, when disturbed, to Termoncarragh. The fresh-water lakes mentioned are on some of the remotest parts of our western coast, but Loughs conn and cullen are also frequently resorted to, two hundred Swans having been seen on the latter on 17th December 1879, and Mr. Warren has a long list of observations of flocks, of various sizes up to thirty birds, seen on Killala Bay and the Moy from time to time on their way to these lakes. The River Suck below Ballinasloe and the neighbouring parts of the Shannon are often visited, as well as Lough Funshinagh in Roscommon, localities where a large number, estimated at four hundred, remained during severe frost in the early part of 1864 (Proc. Dublin N.H. Soc., 1st April 1864).

In co. Donegal the enclosed water of Lough Swilly at Inch, and also a lake in Fanad, are said to be regularly visited in winter; and through Ulster generally this species is more frequent in its occurrence than in other parts of Ireland, except those already mentioned. This has been so for many centuries, as we are told by Giraldus cambrensis that Swans abounded in the northern part of Ireland in his day. In severe winters, however, wandering flocks visit every part of the island, as in the seasons of 1890-91, and 1892-93, when they were recorded from our four provinces, and even occurred on the southeastern coast, where Wild Swans are rare, and in such hard seasons they have been seen on the Arran Islands off Galway Bay. Thirty to fifty Bewick's Swans in a herd are not uncommon on the estuaries and lakes near the coast, according to Sir R. Payne-Gallwey, but smaller parties traverse the country on the wing, and, as stated, there are assemblages of hundreds in some exceptionally severe seasons; thus we read of five hundred having been seen on Lough Gullion near Lough Neagh in co. Armagh, and the same number (probably of this species) have been seen on the Malahide Estuary, co. Dublin.

These Swans sometimes arrive about the beginning of October, but generally early in December, the beginning of which month is the customary time for them to appear in Achill, but a sudden frost at any period of the winter brings them with it. They depart towards the end of February but Thompson mentions two occurrences in March.

THE MUTE SWAN. *Cygnus olor* (Gmelin).

Resident in a semi-feral condition on lakes, rivers, and harbours in the four provinces.

This long-ago introduced species maintains itself well on Irish waters without attention from man, and has increased to considerable flocks in favourable localities. Among these may be mentioned the Lower Lake, Killarney; Rostellan on Queenstown Harbour, where the flock may be seen on the tidal water; Ballycottin Bog, which had formerly fifty or sixty swans on it; Lough Inchiqnin. Co. Clare, inhabited by a flock of forty to seventy; Wexford Harbour, where there were thirty-eight nests on the north intake in 1899 (Mr. Alfred Delap). The fowlers there do not molest the birds, which have extended themselves up the Slaney as far as Enniscorthy. Swans are generally common in the counties adjoining the Shannon, for instance, in Leitrim. On Lough Gara, between Roscommon and Sligo, in 1896, I saw twelve together in one place and seven in another, also more than a score on Lough Gill and the Sligo River. On Lough Erne Swans multiplied to 150, but many were killed by poachers; while on Lough Foyle Swans used to be common, but have become rare, probably from the same cause. When the resorts of these birds become crowded, small parties go forth on the wing, not only to other lakes and rivers, but in many cases to the coast; thus Mr. Warren has seen seven adults on Killala Bay, and Mr. Sheridan has met with others in Achill, while six were approached and one shot on Dundalk Bay a mile from land. This occurs both in summer and winter for instance, Mr. Parker saw twelve in June, on the sea near Miltown Malbay, which flew back towards Lough Inchiqnin.

The eggs are laid here in the end of March or beginning of April, and the female usually sits on them, while the male keeps guard on the water, but should an intruder approach, the female slips off, and the male takes possession of the eggs and defends them. In doing this I have known him, in delivering a blow of his wing, to break some eggs accidentally, when he immediately drank the contents and carried off into the lake the broken shells and the soiled portion of the nest. I have seen an uncompleted clutch of five eggs nicely covered with down and rubbish -when the bird was off them. The young come out in May and immediately take to the water, where they feed on the swarming insects in the tangles of pond-weed, which their parents drag up and hold for their offspring to pick. My Swans drive away their male cygnets in October, but allow the females to remain until early spring, when they, too, are expelled.

So-called "Polish Swans" have been repeatedly shot in Ireland.

THE COMMON SHELD-DUCK. *Tadorna cornuta*
(S. G. Gmelin).

Resident, breeding in limited numbers on the coasts of the four provinces.

The Sheld-Duck is a particularly shy bird, and as, moreover, it breeds underground, its distribution in Ireland has not hitherto been well known; but on nearly all parts of the coast where there are sand-hills and rabbit-warrens, and where it is not much persecuted, this fine bird nests; less commonly perhaps in the east and north east, owing to population. The estuary of the Shannon on both sides, and the islands of its tributary the Fergus, are special breeding-resorts of the Sheld-Duck, as well as Inch in Dingle Bay, inlets of Queenstown Harbour, the Bays of Dungarvan and Tramore, the extensive sand hills and the islands of the Wexford coast; it also nests on one island at least, as well as the coast, north of Dublin Bay, and again north of the Boyne, Lough Strangford (?), the north Antrim coast, a locality on Lough Neagh, the coast of Londonderry (outside Lough Foyle), Lough Swilly, Roaninish Island, and many parts of the Donegal seaboard down to the mouth of the Erne; on the bays of co. Sligo, Killala Bay (where the species has increased on Bartragh under Captain Kirkwood's protection), and Achill Island. On all these the Sheld-Duck breeds, and a specimen sent from Ballyconneely Bay, in Connemara, points to that district as another resort.

Of the flocks which frequent Dublin Bay. Cox wrote (*Zool.*, 1879, p. 482): "The Sheldrake appears in October in small flocks, which generally remain until after Christmas, when their numbers cease. I have observed the largest flocks in March and the beginning of April, after which those that remain are generally paired." Mr. E. Williams informed me in April 1881 that he had seen about fifty of these birds in Dublin Bay during the previous week; and Mr. Warren states that on the estuary of the Moy he has sometimes seen flocks numbering from ninety to a hundred of late years. Individual birds are occasionally found a long way up rivers in winter, but a more marked departure from the ordinary marine habits of the Sheld-Duck took place in Antrim Bay, on

Lough Neagh, where a pair bred on that fresh-water like in the successive seasons of 1894 to 1897, and though the female was taken, another took her place the following year. The particulars were supplied by Mr. H. D. M. Barton, to whom this bird was brought, and also three young ones unable to fly, of which he sent me the head of one; he stated that the breeding-place was in a bank of sand and gravel extending for two hundred yards, with close grass upon it, and riddled with rabbit-holes, about one hundred and fifty yards from the edge of the lake, a marshy bottom intervening.

These birds do not always breed in sand-hills, for I have seen one, day after day, close to a rabbit-warren among furze, on a slope beside the Shannon in Kerry, where I concluded that its mate was hatching, and I have heard of the eggs being found in a ditch under dense furze over the cliffs of our coast; while Sir R. Payne-Gallwey has known the Sheld-Duck to nest in natural holes and crevices on precipitous islands and rocks, and has seen the young carried on the mother's back to the sea. The eggs are not hatched until the latter half of May; a young brood was seen by Mr. Kirkwood, apparently unable to contend with the rough tidal eddy in which they found themselves, and we picked up one of them drowned on Bartragh. Mr. Warren has found that the male takes quite as much care of the young as the female, and will use as many artifices to draw away the intruder from them. While one parent bird is thus occupied, the little ones scatter and dive, and the other old bird devotes itself to draw them away in the opposite direction; but, except young ones when thus escaping, Sheld-Ducks are never seen to dive. If approached by a punt they walk off, unless they are driven to take wing.

THE RUDDY SHELD-DUCK. *Tadorna casarca* (Linnæus)

Rare and irregular visitor, occurring chiefly in summer.

The doubts formerly expressed as to the Ruddy Sheld-duck reaching our shores in a wild condition have been abandoned since the emigration in the Bummer of 1892, when, as Mr. Howard Saunders informs us, there was a great drought in southern and south-eastern Europe, and birds of this species were recorded as wandering, not only to Scandinavia and the British Isles, but even to Iceland and Greenland. So irregular a departure from the breeding-haunts of the species, extending over so large an area, is more like an invasion of Pallas's Sand-Grouse than an ordinary migration; and the analogy was increased by the fact that flocks of the Ruddy Sheld-Duck, up to twenty in number, as well as single individuals, were met with that season from Cork to Donegal, and from Louth to the Lower Shannon, as well as in the Midlands. These birds did not breed, but disappeared after September. The birds seen in 1892 were stated to have been very wild, and their almost simultaneous appearance in so many widely-separated districts proves the reality of the migration.

There was a previous visitation on a smaller scale, in June and July 1886, when Ruddy Sheld-Ducks occurred in small parties, and specimens were shot at Kinsale, in northern Cork and on the Shannon above Limerick; in England, one was shot at Aldborough, Suffolk, 8th July 1886 (Mr. J. H. Gurney); one or two also out of the earlier occurrences of this species took place in summer, the rest in March, none in winter.

As the times when the several instances below took place, have more significance than the localities, the usual arrangement by counties is here abandoned for the chronological order.

Thompson (III, p. 65) mentions the first recorded example which was shot on the Murrrough of Wicklow, on the 7th July 1847, and eventually passed into the Dublin Museum; another shot on Clonea Bog, co. Waterford, about 20th March 1871, was presented to the same museum by Dr. W. W. McGuire (More's List); a male, in the plumage of the second year, killed on a lake close to the sea, near Ardfert, co. Kerry, on 17th August 1869, is preserved in the Neligan collection at Tralee; it was said to have been seen about the district from the previous March, and to have been very wild (*Zool.*, s. s, p. 2105 [1870]).

In the migration of 1886 a pair were shot on the Shannon, at the mouth of Cool River, near Bird Hill; on 16th June (*Zool.*, 1886, p. 25); six were

seen, and one, a female, shot on the sea, at Kinsale, co. Cork, on the 26th of the same month (*Ibid.*); three were seen and one male obtained, by Mr. Greehan, near Banteer, on the Mallow and Killarney line, on 16th

July 1886 (*Ibid.*); Mr. R. Patterson informed me that three were seen, and one shot, on Strangford Lough, c. Down, in March 1888.

The first we know of the 1892 migration is that a flock of about twenty were seen, and one shot, on the Sheskinmore, a marsh near the western coast of Donegal, on the 24th or 25th June (*Zool.*, 1892, pp. 311,393); a flock of five (or seven) appeared at Skerries, co. Dublin, and three were shot there on the 26th June, another bird at Drogheda on 5th or 6th July, while others were said to have been seen on islands off the same coast (*Zool.*, 1892, pp. 359, 393); another was killed near Portarlinton, Queen's County, also in June (*Zool.*, 1892, p. 359); a female was killed out of a flock of six, between

Limerick and Foynes, on the Shannon, on 7th July (*Ibid.*, p. 393); the late Mr. Levinge reported to me, on 25th July, that a pair were then on Ballynagall Lake, Westmeath, where they remained unmolested until the flapper-shooting commenced on 1st August; a female was shot, out of three, on Cork Harbour on 4th August (Mr. W. B. Barrington, in *Irish Nat.*, 1892, p. 147); three were seen, about seventy yards off, near Coolmore, co. Donegal, on 4th August (Mr. W. A. Hamilton, in *Field*, 20th August 1892); one was killed out of a flock of six on Burt Slob, Lough Swilly, co.

Donegal, about 19th August (*Zool.*, 1892, p. 359); two were seen by Mr. G. D. Beresford on a small lake near the sea at Mullaghmore, co. Sligo, about 24th August (*Land and Water*, 26th November 1892); a bird, apparently immature, was shot at Inch, Lough Swilly, on 8th September (*Field*, 17th September and 1st October 1892); another specimen was sent up to Mr. Rohu, of Gt. Brunswick Street, Dublin, from Parsonstown, King's County (*Irish Sportsman*, 15th October 1892).

THE MALLARD.

Anas boscas, Linnaeus.

Resident and common, breeding freely in every county. Numbers increased in winter by immigration.

This is by far the most numerous of the Duck family as a breeding species, and vast numbers are reared in Ireland, chiefly in the wilder parts; while it is not confined to the mainland, for many breed on such large islands as Rathlin, and Deer Island off Connemara. The lakes of Ireland abound with Wild Ducks and their broods in summer, and as the season advances, many flock to the rivers and estuaries, while rocky islands in the sea are used as resting places in autumn and winter, and even as early as the 7th of June. I have seen a large flock on the Keeragh Islands off co. Wexford. On the approach of winter Wild Ducks assemble on inland waters, and in December and January large flights of the foreign birds arrive in Ireland; at Kellyville decoy, Mr. Webber finds the latter distinguishable from the home-bred birds by being slighter in body, tired after migration, and more easily decoyed. When the fresh waters are frozen, as in the hard winters of 1878-79 and 1880-81, Mr. Warren has found this species on the Bands of the Moy Estuary quite as numerous as the Wigeon, an unusual sight, for they generally keep to inland feeding-grounds; though many large flocks seek refuge by day on the open sea, in his district, they do not feed on the estuary with the Wigeon at night, but betake themselves to the stubbles and potato-fields; they do much damage to the ripening corn, and if it remains long in stooks, after it is cut, the Ducks feed on the outside sheaves.

Where protection is afforded them on a piece of water, Wild Ducks resort to the spot in the winter mornings and pass the day there, resting in numbers on the banks, and become very tame; thus, when my cows go to drink where the Ducks are standing, the latter merely move, aside, and the presence of the cow-herd at most causes them to fly out on the water; but should anyone approach with an umbrella, or even with black clothes, they quit the lake.

At Kellyville, on the borders of Queen's Co., is the largest decoy in Ireland. This was started about 1840, and has been much improved by the present owner, Mr. Thomas Webber, who works it with dogs. The lake is near his house, and covers about 15 acres; there are now nine pipes, backed in places by tall trees, and that part of the grounds is protected from intrusion by canals; the water may be seen in winter covered with a vast multitude of wildfowl, chiefly Teal, Mallards and Wigeon, but also including many Shovelers, Pintails, Pochards and Tufted Ducks. One side of this lake is open, and persons walking along the approach, unless they stop to look at the Ducks, are disregarded by them. As dusk comes on flock after flock takes flight with loud outcries, and disperses over the country to feed, returning next morning to pass the day in security. When the place is drawn, the huntsmen do not crack their whips, and the hounds cause little disturbance; a number of Ducks have been seen feeding on acorns under an oak beside the house.

At Longueville, near Mallow, the only other decoy in Ireland is still maintained by Mr. R. E. Longfield. This lake is not so large as the preceding, and there are only two pipes, but it is the resort of great numbers of Ducks of the above species every winter, though they are said to be fewer than formerly.

In the co. Waterford Wild Ducks hatch in March, and in that month I have counted nineteen drakes together on the Cappagh Lake, as they leave their mates when hatching; but in Mayo and Sligo, Mr. Warren finds that the usual hatching-time is the beginning of May. On the preserved marshes of Granston, in Queens co., the numbers of nests on some of the banks with hardly any cover are astonishing. Of the Ducks which frequent the Cappagh Lake in winter only a few breed among the sedges by the water; others nest among the heather in young plantations on hills, four hundred feet higher and nearly a mile away, whence they lead their downy little

ones walking to the lakes, and Sir R. Payne-Gallwey met with a Duck thus engaged by moonlight, in a village street, In many parts of Ireland, Ducks select dry heather on hills and sloped, often far from water, to nest in, and on the red bogs they prefer heather to rushes for this purpose. Many cases have occurred in this country of Wild Ducks breeding in trees of various kinds, on towers and castles and on the tops of walls; I have seen a nest among a dense growth of small twigs proceeding from the bottom of a lime-tree in a plantation. A Mallard which I suddenly disturbed, on an island in Lough Derg in June, flapped along before me as if his wing were broken, thus evincing anxiety to lure me from his brood, like the female. Pure white Mallards have been obtained in Ireland.

THE GADWALL. *Anas strepera*, Linnæus.

Scarce and irregular winter-visitor, occurring from time to time in all the provinces.

Though the Gadwall probably occurs in some parts of Ireland every year, one can never tell where to expect it, as its visits are of a vagrant and fluctuating character, though at certain times, as in January 1896, specimens have been killed in widely separated parts of the country. Still, it never becomes a common bird, and is usually met with singly or in pairs, or in small parties not exceeding five or six. The chief place which it has been known to visit, year after year, is the Longueville decoy-lake, where Mr. Longfield has taken specimens in the four winters between 1893 and 1897. At Kellyville decoy two were taken in the winter of 1897-98 and four in 1898-99.

The Gadwall has been obtained in the following counties:- Kerry, Cork (in all parts), Waterford, Tipperary, Wexford; Dnblin, Queen's Co., King's Co., Westmeath, Louth, Mayo (many times), Sligo, Fermanagh, Down, Antrim, Londonderry, and Donegal. From this it will be seen that hardly any large portion of Ireland remains unvisited, the western sea-board between Kerry and Achill being, however, without records of this species, It may also be remarked that maritime counties where it has occurred greatly outnumber those which are inland; and this shows the transitory and unsettled character of the bird's visits, for it loves to lurk in quiet lakes which afford the cover of aquatic weeds, and if it were, inclined to settle in the country it might find, plenty of such resorts at a distance from the coasts. Mr. Warren has met with Gadwalls on or near the estuary of the Moy on five occasions, and has once noticed them feednig, with Wigeon, which is not their usual habit, for they are inclined to keep apart from other species. They also occur at times in Achill and Blacksod Bay, as well as on the Dublin coast, though doubtless more at home on inland waters. Sir R. Payne-Gallwey has seen six in one winter on Lough Derg, and others have been shot from time to time on Lord Castletown's marshes in Queen's Co.

The earliest arrivals noticed have been in October; in December Gadwalls have been more frequent, while in January the maximum number pave occurred; they then diminish in February and March; in April there have been two cases; and on 25th May 1894 a female was forwarded from Belmullet whose ovary contained eggs which, Mr. Williams considered, might not have been laid for three weeks.

A remarkable hybrid between a Gadwall and a Wigeon was obtained on the Moy Estuary on 4th March 1895 by Mr. A. C. Kirkwood, and is in the collection of Mr. Barrington.

THE SHOVELER. *Spatula clypeata* (Linnæus).

Resident and increasing, breeding in every province in small numbers; more numerous in winter.

It is a pleasure to say that this handsome duck has extended its breeding-range over Ireland, and appears to be on the increase both in summer and winter. Thompson could only speak of it as a winter-visitor, of sufficient rarity for him to mention special occurrences. Mr. G. H. Kinahan first announced its breeding in this country, near Portumna, in 1863 (Proc. Dublin N.H. Soc., 4th December 1863), while at the present day more than half of our counties can be named in which either the eggs or young have been met with, or the males have been seen alone in the breeding-season in suitable haunts where their mates may have been hatching or tending their young at the time; I have thus seen male Shovelers, singly or in small parties, in May and June, on lakes and marshes in many counties from Cork to Antrim.

Kerry - Shovelers used to frequent the Lower Lake, Killarney, in May, from 1870 to 1878, and were said to have nested.

Cork - Seven males and one female were seen on the marsh at Kilcoleman Castle, 3rd May 1899; while at Longueville a male has been seen about the decoy-lake until June.

Waterford - Successive broods were reared on a marsh near the coast in 1893-1895 (Mr. T. Spencer).

Clare - A male was put up near Belkelly Castle on Lough Derg, on 31st May 1892.

Wexford - Shovelers are stated, by residents near Wexford Harbour, to remain to breed (Barrett-Hamilton, in *Zool.*, 1890, p. 104).

Queen's Co. - On Lord Castletown's duck preserves at Granston a good many pairs breed regularly; and on Lough Annaghmore I saw male Shovelers on 2nd June 1899.

King's Co. - On the side-channels of the Shannon above Banagher, and on the neighbouring River Brosna, Shovelers are said to breed.

Westmeath - At Baronston several pairs breed on wet grassy ground beside Laugh Iron; the eggs were taken beside Glen Lough in 1891, and the following year the bird nested there again (Mrs. Battersby, in *Zool.*, 1892, p. 311).

Dublin - An adult male and two young birds were killed near Baldoyle on 24th July 1876 (More's List); Mr. H. B. Rathborne states that this species appears to be in that district all the summer.

Louth - Mr. H. D. M. Barton has killed young birds on Lough Beg Marsh when flapper-shooting.

Galway - At Clonbrock the young have been seen in July, and near Portumna, where the Shoveler was found breeding in 1863, I started a young brood with their mother on an island in Lough Derg on 2nd June 1892; in the Field, 15th October 1898, it was stated that Shovelers had bred on this lake in great numbers for some years.

Roscommon - At Carnagh, on Lough Ree, Mr. Levinge has shot young Shovelers when flapper-shooting. On Lough Key, a female, in anxiety for her brood, on 11th June 1896, displayed the same agonized antics as the bird I saw near Portumna; three males got up on the same lake on 12th June 1891.

Mayo - Shovelers breed on Lough Conn, whence I have seen their eggs taken, and the birds have been seen by Mr. Warren on Rathroeen Lake in summer.

Sligo - Colonel Cooper informs me that young birds, with the unmistakable bill of the Shoveler, have been shot in August on small bog lakes three miles south of Dromore West.

Fermanagh - These birds have long been known to breed on the marsh at Castle Irvine, and while visiting upper Lough Erne I saw six males in different places, only one accompanied by a female, on 29th May 1895, the high grassy islands of this labyrinthine lake being most suitable for them to breed on; I also saw a male and female at Devenish, on Lower Lough Erne, on 7th June 1891.

Monaghan - On Castle Blayney Lake, Shovelers were seen on 28th May 1895.

Tyrone - A nest with eggs was taken on an island in Lough Neagh in May 1896.

Antrim - I have seen Shovelers on Portmore Lough, in the neighbourhood of which the eggs have been often taken.

Donegal - These birds have bred on the reclaimed slob-lands near Lough Swilly since before 1877 (Field, 26th May 1877) also in 1889 at Port Lough, and are increasing in the neighbourhood of Coolmore, Ballyshannon, where a few pairs breed near the coast.

I have not quoted information from Longford and Leitrim, where there is some reason to think Shovelers also breed.

The Shoveler is a winter-visitor to all parts of Ireland, but is scarce in most counties, though more plentiful in the great central plain, with its bogs and lakes, and, to a less extent, in Connaught, and on the inland part of Lough Swilly. Westmeath, King's and Queen's Counties are, perhaps, more resorted to than any others, and in several parts of these the increase of Shovelers in winter has been remarked since 1889. This is evident from the numbers annually taken at Kellyville, where Mr. Webber states that several hundreds frequent the decoy-lake from November to April; in the winter of 1889-90 he took fifty-eight of these birds, the highest number recorded up to that time, and though they fluctuate from year to year, in 1895-96 sixty-five were taken. Many similarly resort to the decoy-lake at Longueville in the northern part of co. Cork.

The Shoveler, having small feet, is ill-adapted for tidal currents or rough water, and is seldom found on such, though Sir R. Payne-Gallwey has often met with it on the verge of mud-banks and in narrow channels. It is rather a bird of quiet inland waters, its peculiar bill being formed for surface-feeding among pond-weed, accordingly it resorts to lakes, marshes, and the quiet side-channels of the Shannon, called "back-rivers." I have seen Shovelers feeding intermixed with crowds of other wildfowl, but in the "Fowler in Ireland" they are said to swim in close bunches of from seven to fifteen, probably on estuaries, before they have reached their inland retreats.

This bird does not nest in heavy cover, but prefers flat grassy land near lakes, away from the reed-beds, and it lays in the end of April or early in May, often under no better cover than a tuft of grass. The male sometimes exhibits anxiety for the young as well as the female, and utters a "quack" which is doubled when his alarm is increased, but this note is not so loud as that of the Wild Duck.

THE PINTAIL. *Dafila acuta* (Linnæus).

Winter visitor, but local; rare in most parts of the country. There are two records of its breeding in Ireland, but not recently.

The Pintail resorts annually to certain localities, outside which it is looked upon as a rare bird; but its haunts are not confined to any province, and are to be found on tidal waters as well as inland lakes. Sir R. Payne-Gallwey states that he has seen it in hundreds on the lake near Castlegregory (Lough Gill in Kerry), and he has observed one hundred to one hundred and fifty, chiefly male birds, off Coney Island in the estuary of the Fergus, co. Clare, A small number annually frequent the decoy-lake at Longueville near Mallow, where Mr. Longfield has seen thirty to forty males; a great many also visit the Kellyville decoy, and the numbers taken there mounted up, in successive seasons, to fifty-six in the winter of 1891-92, after which they gradually declined; Pintails are, moreover, frequently shot on the neighbouring parts of the Barrow, and on Lord Castletown's marshes near Granston. The estuaries on the north coast of Dublin are resorted to at times; so are the Shannon Lakes, exceptional numbers having been reported from Athlone early in 1864, when such numbers of Wild Swans were recorded. On Lough Corrib the Pintail has been seen rather plentifully ("Fowler in Ireland"); while to the Moy Estuary it is a regular winter-visitor, increasing in hard seasons like that of 1878-79; and since 1896 Mr. Warren has found it become more numerous, as many as eighty having been counted on Bartragh. Drumcliffe and Ballysodare Bays were given as localities by Captain Kinsey Dover; and Mr. W. A. Hamilton has seen Pintails every spring on a piece of brackish water separated from Donegal Bay by a sand-bank. At Inch, where a portion of Lough Swilly is enclosed, Professor Leebody has seen very large numbers; there, as he says, the Pintail is plentiful in February and the beginning of March, a few being present all the winter, but during the latter part of February their numbers increase greatly, In co. Antrim Mr. Barton tells me this bird is common, and the "Belfast Guide" says it is obtained annually in very small numbers, but more frequently than the Shoveler. Though Thompson stated the Pintail was an annual visitor to Wexford and Waterford Harbours, it seems to have become rare in our time, and is looked upon through Ireland generally as a bird to be recorded and preserved when it is obtained. Thompson remarked that many had been killed late in September and early in October and Sir R. Payne-Gallwey has shot immature birds which occurred in small parties at that time of year, but there is an increase towards spring which has been noticed above; the birds usually leave in April, and Mr. Warren has seen them late in that month, while Messrs. Williams & Son received one on 10th May from Westmeath.

With regard to the Pintail breeding in Ireland, Lord Castletown has an egg, measuring 2-14 by 1-6 in., which he informs me he took when a boy from a Pintail's nest near Granston and this is the only instance I can cite of its breeding near Abbeyleix. Sir R. Payne-Gallwey states that he has seen Pintails, on rare occasions, with their broods, on the lakes of the west of Ireland. To these cases I have not been able to add another, nor to trace the bird further in the breeding-season in this country.

I have examined the handsome hybrid between the Mallard and the Pintail shot, 1st January 1879, near Youghal by Mr. A. Lawe.

THE TEAL. *Nettion crecca* (Linnæus).

Resident, breeding in every county, except perhaps Dublin, in limited numbers, which are greatly exceeded by the immigrants in winter.

The Teal is found more or less at all seasons throughout Ireland, being the species of Duck which, next to the Mallard, breeds most numerous in this country. The numbers of nesting Teal, however, seldom approach those of the larger species; though in the Donegal mountain lakes Mr. Hart thinks they are more numerous, and great flocks of flappers come down in August to some lakes and tidal inlets in the north of Donegal. The

winter arrivals appear in the harbours and estuaries in great plenty about the end of October or first week in November; in a short time they disperse, and the majority make for inland waters, but Teal are found throughout the winter on parts of the coast, though they do not again visit the tide in large numbers unless the lakes are frozen ("Fowler in Ireland"). On a lake in the Arran Islands Teal occur regularly in winter, but on the estuary of the Moy they are seldom seen, though very numerous on adjacent lakes at all seasons; and at the lighthouses they are noticed irregularly. Turning to an inland locality, the decoy-lake at Kellyville, Mr. Webber has written:- "Several hundred Teal remain on the lake until May, and come in again, young and old, in August and September; the foreign ones come in thousands from 1st to 20th November, and leave about 15th March. I am sure that the fowl move on, and others come in their place, all through the winter; just now (5th January 1891) the summer Teal have gone, and there are vast flocks of foreign birds which have never seen a decoy; they are sitting on the ice, covering five or six acres, as thick as they can sit, six or seven thousand in all, and they will let you walk up to within one hundred yards of them on the open side of the lake." This was in a very hard winter, when an unusual concourse occurred at Kellyville, but still the Teal is ordinarily by far the most numerous species there.

Through the country this bird resorts to quiet shallow waters of all sizes to feed; while in summer it is to be found breeding, not only in demesnes on sheltered lakes, whose banks are over-grown with high, rank herbage, but also on marshes near the coast, on the great inland bog's among heather, which affords favourite nesting cover, and in which Teal breed on uplands and even on hills. Elevated bogs near mountains are their special breeding-resorts in Waterford, and in a place of this description I have come on a Teal in a ditch with her downy brood, which first crowded together, then stampeded at a wonderful pace across the heather, and finally disappeared by scattering and squatting quite still. A parent bird, flapping to lure one from her young, is a common sight on the inlets of Irish lakes and on unfrequented ponds; in Achill a female has been known to follow her brood closely when driven into a yard where there were dogs and people. Laying takes place from the end of April to the beginning of June, being retarded by the elevation and exposure of the locality; the eggs at first have a tinge of green, but this they seem to lose afterwards.

THE GARGANEY. *Querquedula cirvia* (Linnæus).

Very rare visitor, chiefly in March and April, but has occurred in January and February.

The Garganey is stated to have been seen or taken in the counties of Clare, Cork (four times), Carlow, Wicklow, Dublin (thrice), King's Co., Westmeath, Mayo, Fermanagh and Down. Five of the instances given were in March, two in April, but one bird is stated to have been obtained in "autumn," while one was announced in January, and another purchased in February.

Some of the records of this bird by Thompson and others give us very little information.

Clare. - An adult male was shot on the River Fergus, as mentioned by Watters (1853), and was in his collection, since destroyed by fire.

Cork. - An adult male, seen by Harvey, was killed in the county (Thompson, III, p. 91). Another, in the Dublin Museum, was obtained at Castle Richard about 1863. Three were shot on Queenstown Harbour on 20th March 1878 ("Fowler in Ireland," p. 63); and a fourth was seen in the same place in March 1880 (Ibid.).

Carlow. - One, now in the Dublin Museum, was obtained on the Barrow near Bagenalstown in March 1888 (Dowling, in *Zool.*, 1888, p.187).

Wicklow. - A male, preserved at Colebrooke, was shot on Lough Broad on 26th April 1870 (Brooke, in *Zool.*, s. s., p. 2284 [1870]; a female accompanied this bird.

Dublin. - An immature male was obtained in the vicinity of Dublin during autumn 1850 (Watters, p. 201). Two were stated by Glennon to have been shot in Dublin Bay in the winter of 1880-81

("Fowler in Ireland," p. 62). A male was obtained in the King's Commons, near Balbriggan "at the close of the shooting season" 1888 (Templer, in *Field*, 5th May 1888).

King's Co. - One, shot at Edenderry, about April 1841, was in Dr. Farran's collection, and seen by Thompson (III., p.91).

Westmeath. - One was said to have been shot at Knockdrin in the winter of 1833-33 (Ibid.).

Mayo. - Mr. Sheridan stated that he obtained two at Achill ("Fowler in Ireland," p. 62).

Fermanagh. - A female was caught alive on Laugh Erne on 26th January 1869, but was not preserved (H. S., in *Field*, 6th February 1869).

Down. - One was stated to have been seen on Strangford Lough in March 1847 (Thompson, III, p. 91). A specimen in the Dublin Museum is labelled "Warren collection," and Ball informed Thompson that he had seen fresh Garganeys on sale in Dublin, which were evidently Irish killed

THE WIGEON.

Mareca penelope (Linnæus).

Regular and abundant winter-visitor. Some are believed to have bred, but the nest has not been found.

The Wigeon occurs regularly in winter, sometimes in enormous numbers, and chiefly on the estuaries round Ireland; but it is also found on inland lakes, marshes and rivers, where these are sufficiently free from disturbance, the larger sheets of water being preferred to the smaller lakes, as the flocks can rest by day far out upon the former. When, however, a small piece of water, like that at Kellyville, is constantly protected from shooting, Wigeon resort to it in considerable numbers. Among the marine estuaries frequented by these birds I may mention the bays and harbours of Kerry, Cork, Waterford and Wexford, Dublin and Dundalk Bays, the Loughs of Strangford, Belfast and Larne, Loughs Foyle and Swilly, Mulroy and Sheephaven Bays, the three bays of co. Sligo, the Moy Estuary, and Broadhaven. Those bays which belong to the north and north-west coasts appear to be visited by the largest numbers, but on some, as on Belfast Lough, this species has dwindled away through persecution.

Thompson has repeatedly recorded the arrival of Wigeon in Belfast Lough during the latter part of August, and birds have been shot in Wexford Harbour on the 28th of that month, but these were exceptionally early; for though some arrive in September even in the south-east, they are seldom noticed much until about the 10th of October, after which they increase in numbers until the middle or end of November. Sir R. Payne-Gallwey says that they leave between the middle of February and the end of March, but that many may be seen on inland lakes until April; while Mr. Warren has twice seen Wigeon up to the 20th and Thompson on the 23rd of April. At Inch, indeed, on Lough Swilly, Wigeon, as well as Scaup, have been known to linger until the third week in May (Mr. D. C. Campbell). Like other wild-fowl, they come in much greater numbers in those severe winters, which occur comparatively seldom in Ireland, and which, moreover, drive them from the frozen lakes to the coast.

The numbers taken in Kellyville decoy fluctuate from several causes; thus, when the neighbouring valley of the Barrow is flooded, Wigeon forsake the lake to feed in the flooded fields along the river. There are few of this species taken in the decoy compared with the Wild Duck and Teal, the greatest number, two hundred and ten, having been caught in the winter of 1890-91; but during the six winters 1882 to 1888 none were taken, for though three hundred or more frequent the lake, they are difficult to decoy.

Details of the habits of Wigeon in connection with punt-shooting are given by Sir R. Payne-Gallwey from his personal experience on Irish bays and estuaries ("Fowler in Ireland," pp. 36-48). He describes how they sit in dense companies, and, when they take wing, fly in dark sweeping clouds the roar of whose wings as they rise or pitch may be heard a mile off or more. The marine food of these birds is *Zostera marina*, and as the rising tide restricts the uncovered space the flocks huddle together into packs. After feeding on the banks during the night, for security's sake, they fly to sea at dawn, and rest there during the day; when they get the chance, however, they will feed with avidity during the day, nibbling the short grass at high water on lonely shores, and on the fields bordering quiet lakes. On inland waters they may often be seen in company with Coots, and will watch the latter diving for and bringing up pond-weed, when they rush in and seize it.

Watters describes the cries of migrating flocks of Wigeon, which were mingled with those of other wildfowl, passing over Dublin by night, and Mr. Campbell relates a similar circumstance that took place in Londonderry (*Irish Nat.*, 1879, p. 222).

Sir R. Payne-Gallwey states that he has searched at least fifty lakes in Ireland without finding a Wigeon's nest or meeting with a young brood, but that when fishing in early autumn he has seen females and young birds on the Shannon lakes, and on the great chain of lakes in Connaught. Moreover, Lord Castletown's gamekeeper reported that he had seen a female with her brood at Granston about 1888. On all the lakes I have visited, the only instance in which I have clearly identified a Wigeon was on the 3rd of June 1893, when as I was approaching a small stony island in Lough Allen, co. Leitrim, a male got up in full view, and a female in his company flapped away and hid. Sir Douglas Brooke, however, has shot very young birds in Fermanagh on 1st August, and Wigeon are said to have been seen or heard in summer on Lough Erne or on the mill-dam at Castle Irvine. These birds have long been believed to breed at Caledon, co. Tyrone, though on what this belief has been formed does not quite appear; but Lord Caledon informs me that he has occasionally observed Wigeon there during summer. A pair were seen several times in June 1892 on Lough Fern, co. Donegal, by Dr. Patterson, and Mr. H. Leybourne Popham observed a male bird on several occasions, at the same lake in Connemara, during the early part of May 1892.

There is some reason, therefore, to think that a few Wigeon may breed in Ireland.

THE RED-CRESTED POCHARD. *Netta rufina* (Pallas).

Has once occurred in Kerry, during a severe winter.

The only example of this handsome duck obtained in Ireland was a male shot by Mr. Victor McCowen, about a quarter of a mile from Tralee, early on the morning of the 18th January 1881; it was quite alone, and rose from a spring in a marshy field. The winter was one of severe frost, when flocks of White fronted Geese and other wildfowl appeared through the south in unexpected localities. The above specimen was seen by Sir R. Payne-Gallwey before it was skinned, and is now preserved in his collection; it was exhibited by A. G. More before the Zoological Society of London on the 15th March 1881 (Pr. Z. S., 1881, p. 409).

THE POCHARD. *Fuligula ferina* (Linnaeus).

Winter-visitor, sometimes in considerable numbers. Is stated to have bred in several counties.

The Pochard visits every part of Ireland in winter, and is chiefly to be found on the inland lakes, on some of which, as on Lough Derg (Shannon), flocks of thousands have been reported. Marine inlets, like the fiords of Kerry and Lough Swilly in Donegal, are also frequented by this bird, but it flocks to the tide to a much greater extent when inland lakes are frozen. Sir R. Payne-Gallwey states that on some of the south-western estuaries he has seen five thousand collected after a gale, and on Lough Gill, near Castlegregory, fully three thousand, with Scaup and Goldeneyes. Pochards visit Achill and Rathlin Islands commonly, but seem to be fond of small inland lakes, to which they betake themselves for a while, in parties of a few individuals or in large flocks, and then depart capriciously. On Lough Derg Pochards make their appearance on certain bays overgrown with weeds in August or September, and may then be found moulting their quill-feathers and unable to take wing ("Derg" in *Field*, 25th August 1877); but they are not generally seen, at all events on the coast, before November, and I have chiefly noticed them at Cappagh in the early months of the year; while Mr. G. H. Kinahan has observed them on lakes near Clifden in March and April only. A flight of thirty or so will visit the decoy, at Kelly-ville in November, and then leave it if frost sets in, returning in February; but, as Mr. Webber remarks, they do not hang on all the winter.

The majority leave in March, but a pair or a single bird may often be seen lurking on a quiet lake in April, and in cases where birds have been reported in May and June it may fairly be suspected that they were breeding.

The Pochard feeds in shallow water by diving, being much more persevering than the Tufted Duck when so occupied. On inland waters, for which it has a predilection, it eats soft green pond-weeds, which it often brings to the surface, and seeds of aquatic plants; but on tidal water it scoops along the mud at the bottom for shell-fish (Thompson). As long as the land only is frozen it does not suffer, but when the shallows are covered with ice Pochards are sometimes found dead beneath it, having got there in their excursions under water, for they do not feed in deep places.

They are not so ready to take wing as the surface-feeding ducks, but, when apprehensive, they sink their bodies so deep as to offer little mark. A flock of Pochards, as well as of Scaups, when approached by a punt, will divide and subdivide, and open out into a string, which foils the fowler's attempt at a big shot. On small lakes they are comparatively tame, and I have seen the companions of a bird I had shot, after taking wing, return and alight again near their dead comrade.

Pochards like a stretch of water before them to get on the wing, and are disinclined to fly overland; accordingly, as they must rise against the wind, they never come near those pipes in a decoy where there is an off-shore wind - the favourable condition for taking other ducks. Mr. Webber assigns this as a reason why they are so rarely caught in his decoy.

Sir R. Payne-Gallwey has met with a preponderance of adult males in an assemblage of Pochards, and remarks how different this is from the case of the Goldeneye, adult males of which species are few in Ireland; while even among Scaups the females, he tells us, greatly outnumber the males. On this subject professor Leebody remarks that he has frequently noticed the Pochards on Lough Swilly to congregate in small flocks, all of one sex.

To the breeding of the Pochard in Ireland we have more testimony than in the case of the Wigeon, though as yet unsupported by the absolute proof of specimens. Among the cases given are the following:-

Kerry. - Mr. Chisholm, the game-keeper, showed me a spot at Muckcross where he said he had put a Pochard off her eggs in 1897.

Tipperary. - Mr. W. B. Purefoy informed me, in 1891, that a female Pochard, which he had winged in winter, remained on Marlfield Lake; a male mated with her and she brought out a brood which Mr. Purefoy saw several times. Mr. Spaight saw a "Red-headed Diver" with twelve young ones on Lough Derg in the summer of 1880 ("Fowler in Ireland," p. 98).

Westmeath. - Mr. Maxwell, the keeper at Knockdrin, told me that in 1891 he saw on Brittas Lake a pair of old birds with seven young. He described the male as having a red head and grey back. The late Mr. H. C. Livinge saw flocks of Pochards and Tufted Ducks on his lakes rather late in the summer of 1893.

Meath. - Sir John Dillon informed me that he had repeatedly seen male and female Pochards on the Boyne, and on one occasion the duck was accompanied by young ones.

Sligo. - Colonel J. J. Whyte stated, in the *Field* of 2nd June 1877, that a pair were then nesting on a small lake in his grounds.

Down. - Thompson was "credibly informed" that a pair bred at Clay Lake in 1847 and in 1849.

Antrim. - Pochards as well as Tufted Ducks bred on Portmore Lough in 1882 according to Mr. Bland, the agent of the estate, who informed me that he had shot the young of both species that season. Colonel E. A. Butler wrote to me that he had seen both Tufted Ducks and Pochards on Portmore Lough in May 1884.

Dr. Cox, who had lived for many years near Lough Neagh, stated that he had shot young Pochards nearly every summer, from the 20th July onwards, that these young usually numbered from five to eight, and that an old duck, sometimes an old drake, was somewhere near, if not with the brood. He added that these birds, which he always found on Lough Beg, had become scarcer, and that the last time he was there, in August 1878, he shot young Pochards which could fly about 200 yards (*Zool.*, 1880, p.225).

In Queen's Co., Monaghan, and Donegal Pochards have been seen in Mayor later. My own researches, in many counties; have been unsuccessful as regards the breeding of this bird.

THE FERRUGINOUS DUCK. *Fuligula nyroca* (Güldenstädt).

Has been obtained six times between November and March.

The first, a male, was shot from a small flock of ducks off the Dublin coast in March 1871, by Mr. H. Blake Knox, in whose collection it is preserved (*Zool.*, s. s., p. 2645 [1871]).

Another male, also preserved for Mr. H. Blake Knox, was probably obtained on the coast of Antrim; it was picked out of a lot of birds packing for London in March 1871 (Ibid.).

Sir R. Payne-Gallwey states that he obtained on the east coast in 1879 two immature specimens, which he found paddling about a creek with some Tufted Ducks ("Fowler in Ireland," p. 101).

An adult male was shot on the

Shannon near Athlone, on 21st January 1893, as I am informed by the Rev. P. A. Keating, who identified it; it is the property of Mr. Robert English, of Athlone (Williams, in *Zool.*, 1893, p. 106).

An adult female was obtained at Baronston, co. Westmeath, about 18th January 1897, by Colonel Malone, in whose possession it is preserved.

On 27th November 1897 Mr. F. Coburn purchased in the Birmingham market a young male, received with other ducks from the south of Ireland. (*Zool.*, 1898, p.25).

The Dublin Museum as yet contains no Irish example of this duck.

THE TUFTED DUCK. *Fuligula cristata* (Leach).

Now resident in limited numbers in parts of each province, and extending its breeding-range.

One of the most interesting of the recent facts of our ornithology is the establishment and spread of the Tufted Duck in Ireland as a breeding species within the last quarter of the century, or thereabouts, though this is only of a piece with its summer increase in Great Britain, especially in Scotland, a subject which has been treated very fully in two papers by Mr. Harvie-Brown.* When Thompson wrote (December 1849), this bird was only known as a winter-visitor, chiefly to the north-east; east, and south-east coasts, though Montgomery had found it common on the Mayo lakes, but it was described as rare in north-west Donegal, and from Kerry only one specimen had been reported. Thompson found Tufted Ducks much less plentiful in Belfast Lough than Scaups or Pochards, but on one occasion as many as two hundred had been seen there, and a like number on Carlingford Lough; the only instance he was able to give of the occurrence of this bird in its breeding-season was that of an adult male killed on Lough Neagh on 17th June 1834. Mr. R. Lloyd Patterson once saw as many as two hundred on Belfast Lough on 21st January 18n, but on other occasions from 12 to 30 ("Birds, Fishes and Cetacea of Belfast Lough," p. 216).

The late Mr. J. C. Bloomfield related to me that when he lived at Castle Caldwell, on Lower Lough Erne, he used to discuss the habits of the birds found there with the late Sir Victor Brooke, the well-known naturalist and sportsman. At that time the Tufted Duck was a familiar winter-visitor to the district. One evening, late in May, Mr. Bloomfield saw a pair fly up the lake; he could not be sure of the date, but placed it about 1877, and a couple of years after that he saw a brood of young. The species rapidly increased, until ill the "nineties" I found it breeding commonly on the islands throughout Lower Lough Erne, and was informed that it nested on Upper Lough Erne in 1892.

Sir R. Payne-Gallwey mentioned, in 1882, the following breeding localities:- Lough Neagh, and the neighbouring Lough Beg; Mount Louise, in Monaghan; and the great Shannon lakes, concerning which he intimates in a recent letter that he had seen

*"Annals of Scottish Nat. Hist.," January 1895, pp. 1-22, and Proc. Royal Physical Society of Edinburgh, Vol. XIII., pp.144~160.

Tufted Ducks in spring and summer on Lough Derg and other lakes, long previously to 1882. For this bird to have settled in such widely-separated places demands of itself a lapse of time that would carry us back further than Mr. Bloomfield's date of 1877; and though Mr. Lloyd Patterson did not mention the breeding of the Tufted Duck in his paper on Swimming Birds in 1875, we cannot safely infer that it had not then nested, for in a country where the very name of the bird is frequently unknown, personal exploration is needed to ascertain where it breeds. I now give the results of my investigations since 1890:-

Kerry. - Dr. Blake Knox found nests on Killarney Lakes in 1896 and 1897, while in 1898 I saw a female with her young on a separate pond in the same district.

Cork. - On an extensive marsh, beside the ruined castle of the poet Spencer, in north Cork, I saw Tufted Ducks on 3rd May 1899, and Mr. Harold Barry afterwards told me that the nest was found there.

Clare. - On a small lake, near Corrofin, I observed a male and female on 17th June 1895.

Tipperary. - Dr. Blake Knox states that the Tufted Duck bred on Kings-well Lake in 1890. A male and female were observed at Castle Lough on Lough Derg on 21st May 1899.

Westmeath. - On Lough Iron I saw many males, seven in one group, on 14th June 1891. On Lough Drin the late Mr. H. C. Levinge saw nine in July 1892, and flocks late in the summer of 1893.

Longford. - On Lough Oughter I met with two pairs, 10th June 1892; on Lough Forbes (Shannon) two males and a female on 2nd June 1893; at the Black Islands, Lough Ree, a pair on 1st June 1893.

Roscommon. - At small islands near the western shore of Lough Ree I saw four pairs, and found two nests with eggs, 7th June 1892. On Lough Key I found eggs and saw Tufted Ducks paired in every part of the lake on 12th June 1891, while on 11th June 1896 a great increase was observed on this lake, for we could see at least ten Tufted Ducks on each part we visited, and there were numerous nests with eggs on the islands.

Sligo. - On Lough Arrow I saw a pair, 11th June 1891, and on 10th June 1896 nine nests with eggs were found near the same place.

Leitrim. - On Lough Allen Mr. a. a. B. Whyte has seen Tufted Ducks in the breeding season, 1898-94.

Fermanagh. - Besides Upper and Lower Lough Erne, above alluded to, Tufted Ducks bred before 1891 at castle Irvine and St. Angelo.

Monaghan. - Mr. Evatt had yearly observed broods of this species at Mount Louise before 1882. I saw a pair on Glaslough Lake, 18th June 1894, and others on Castleblaney Lake on 28th May 1895.

Armagh. - The late Rev. G. Robinson saw old Tufted Ducks with young ones on the southern shore of

Lough Neagh, before 1882 ("Fowler in Ireland," p.106).

Antrim. - Mr. Bland informed me that he had shot young birds bred on Portmore Lough in 1882, and the birds were seen there by others in May 1884 and in May and June 1894.

Londonderry. - Lough Beg, between this county and the last, was known as another breeding resort to Rev. G. Robinson before 1882.

The portions of Ireland where this bird is not yet known to nest include the province of Leinster, south and east of Westmeath, the co. Waterford and eastern Tipperary, the province of Connaught, west of the Shannon and Lough Arrow in Sligo, also the co. Donegal. On Lough Gill and Lough Melvin I remarked the absence of Tufted Ducks, which breed numerously on other lakes in the same counties. The winter arrivals of this species seldom appear before December, and they are more noticed after that month. Mr. Webber has found the Tufted Duck remain on Kellyville Lake well into April, but always leave before the 1st of May.

Thompson remarks that the proportion of males of this species seen in Belfast Bay was stated to be four to one female.

The Tufted Duck is to be found on tidal waters in winter, though rarely in large flocks, as it decidedly prefers inland lakes, and at that season is to be found throughout Connaught and other parts of Ireland that are beyond the limits of its present breeding-range. It is a quiet and comparatively unsuspecting bird; thus, when the nest is approached, the female, if she have time, swims off and remains on the water with head erect watching the intruder. The note, uttered on the wing, sounds like a croak. Tufted Ducks and Pochards are taken in Lough Neagh with nets sunk in fifteen fathoms of water, in which these birds are entangled when diving for food.

The nest is placed among coarse herbage, not far from the water, usually on islands, but not among trees or bushes. I have seen nine nests, each in the centre of a large clump of rushes, on a high grassy peninsula, with cattle, sheep, and horses grazing between the nests. One of these had a web of this bird's sooty down covering the eggs, and at first sight this looked like a cow-dung.

The eggs are laid at the end of May or beginning of June, and I have once known the number to amount to fourteen.

The female feeds her young on the open water by diving for their food, and lives harmoniously with the pugnacious Coots; she may thus be observed from the passing train, which does not alarm her.

THE SCAUP-DUCK. *Fuligula marila* (Linnæus).

Winter-visitor to the coasts; numerous on those of the north, but not common in the south, except in severe seasons.

Belfast Lough, chiefly on the Antrim side, is a notable resort of this species, and Mr. Lloyd Patterson thinks that it was at least as numerous when he wrote in 1881 as in Thompson's time, not being killed by wildfowl shooters. Each of these writers tells us that flocks of several thousands were occasionally seen there. Lough Swilly, too, and other northern bays, are frequented in winter by great numbers of Scaup-Ducks, and Sir R. Payne-Gallwey mentions also the bays of Kerry, the Shannon Estuary, the Galway Coast, and Dundalk Bay as localities in which he has met with great assemblages, though he found the Scaup somewhat rare in the south of Ireland. It is a regular visitor to Dublin Bay, and is found in Achill, but does not resort regularly to Killala Bay, though Mr. Warren has met with a few there at long intervals. On the whole, it is most abundant in the north and west as far as Kerry, and most uncommon on the south coast from Kerry to Wexford.

The Rev. G. Robinson found the Scaup a regular frequenter of Lough Neagh, on another part of which the Sheldrake has been found breeding; but the occurrence of the former on inland waters is exceptional, and when the bird is so found it is generally only as a straggler. I have a few notes of captures of this kind from several points along the Shannon valley, and from an inland lake in co. Cork, while, in January 1857, I shot a male at Cappagh. Three were killed six or seven miles up the Blackwater in October 1880.

In the north Scaups sometimes appear in September, Thompson having recorded their arrival in that month on seven successive years, and once at the end of August. Sir R. Payne-Gallwey also tells us that they arrive early in the season, and by the middle of October are as plentiful as they will be for the winter, while hard weather does not seem to increase their numbers; there are none to come then from inland waters, as in the case of previous species. These birds often linger until the end of April, and a few have been observed or shot on Lough Swilly, especially near Inch, in May, June, July, and August, though very seldom after May. The Scaup, however, has not been proved to breed in Ireland, an alleged case in Kerry not being admitted.

On the water no fowl show thicker at a distance, or scatter more when approached ("Fowler in Ireland"), each flock dividing and subdividing like Pochards, and when wounded they can sink themselves, often with only the bill from the nostrils exposed. They are not to be obtained at flight-time, like the ducks that resort to fresh water. When a large flock is approached the nearest birds take flight over the others, which remain until they in turn are left next the intruder, and follow the fugitives; the continuous noise thus produced has been compared to that of volley firing.

The Scaup, it has been said, disregards noise, such as the ringing of a fog-bell which drives away other birds, and on being fired at will swim around a slain companion unless the shooter shows himself (Ibid.)

This bird feeds by diving like other ducks of this group, chiefly on molluscs and crustaceans, but also partly on seeds of *Zostera* and on some other marine plants.

THE GOLDEN-EYE. *Clangula glaucion* (Linnæus).

Winter-visitor, occurring both on salt and fresh water in all parts of Ireland, but not so numerous as the Pochard.

The Golden-eye, though not so exclusively marine in its habits as the Scaup, frequents the brackish waters of the estuaries and bays round Ireland, as well as the lakes, ponds, and larger rivers of the interior, being specially common on Lough Neagh. Though it visits all the waters of Ireland more or less, it is more common on those of the north, and less so in Munster.

It is late in its arrival in the greater part of Ireland, and Thompson mentions the 5th October as the earliest date known to him; though Mr. J. E. Palmer saw seven Golden-eyes on a Connemara bay at the unusual date of 4th September. This species is, however, most commonly seen from October onwards, though not in any numbers—except on some northern bays until after the middle of December. Cox noticed an increase in the number and size of the flocks in Dublin Bay at the end of March and beginning of April. This was doubtless due to the fact that birds dispersed over the fresh waters of the country assembled on tidal estuaries previous to their departure, which takes place in the months last named. (Sir Douglas Brooke has seen Golden-eyes in

Fermanagh as late as the 5th May, and Professor Leebody has noticed individuals in July at Inch, on Lough Swilly.

Golden-eyes are mostly seen in small parties, and seldom in large flocks, though cases of these are mentioned. Thus Thompson speaks of 150 to 200 unmixed with other species, and Sir R. Payne-Gallwey has seen a couple of hundred together; without a full-plumaged male among them; a great preponderance of females and young over adult males which is a peculiarity of the Golden-eye in Ireland, as well as Great Britain. This species does not often consort with other ducks, being less gregarious; little parties may be seen diving simultaneously and remaining for a very short time above water when they rise. Being more wary and restless than most wildfowl, they take the wing if approached, and do not swim deep as a means of escape; but if fired at on the water, they will dive at the flash.

The Golden-eye can take wing directly it rises to the surface after diving, and in flight it makes more whistling with its wings than allied species do. It feeds in the daytime; chiefly on crustaceans, molluscs, and insect-larvæ, but also on aquatic plants and seeds, which it obtains by diving; and it does not frequent the banks exposed by the receding tide as a feeding-ground, neither does it fly at dusk as other ducks do. Professor Leebody remarks, however, that Golden-eyes resort to the enclosed water at Inch in the daytime, and fly in the evening towards the outer part of Lough Swilly, unlike other ducks. Mr. Warren observes a similar habit on the estuary of the Moy, where the birds that frequent it in February never seem to stay at night, but fly to the open bay, where they remain until daybreak.

THE LONG-TAILED DUCK. *Harelda glacialis* (Linnæus).

Irregular winter-visitor in small numbers.

The Long-tailed Duck is recorded more or less frequently from nearly all out' maritime counties, but oftener from northern Ulster and the north coast of Connaught than from the south of Ireland, where it is rare. It has occurred on the Clare side of the Shannon estuary, in Dingle Bay several times, at Castletownsend and Cork Harbour, Dungarvan Bay, Tacumshin Lake and Wexford Harbour, Dublin Bay about ten times, the Boyne mouth and Dundalk Bay, Belfast Lough about twenty times, Rathlin Island repeatedly, Loughs Foyle and Swilly usually once or twice each winter, Killala Bay often (*Irish Nat.*, 1898, p. 121), and at Achill and Inishgort. Single individuals have also occurred on inland lakes, several times on Lough Derg and on both sides of it, on Lough Conn, on a mountain lake in Tyrone, on the River Bann north of Portadown, and more than once on Lough Beg. In another instance a Long-tailed Duck was obtained on a small pond at Rathfarnham on the south side of Dublin.

This species does not appear before October, but for that month there are fifteen records, and nineteen each for November and December. Afterwards, notices become very few, but there have been cases of Long-tailed Ducks remaining until April, and even into May, in which month Mr. Warren has observed the bird on the Moy estuary, and Mr. Lloyd Patterson noticed three mature individuals on Belfast Lough.

By far the greater number of those killed in Ireland are immature, but adult males have been obtained in many cases.

Previous to 1868 Mr. Warren met with this species in his district almost annually, but since that year its visits have been rare and uncertain. This was unaccountable for its feeding-grounds were not disturbed, as they lay out in the bay close to the surf of the Moy and Killala Bars, where in October 1856 he saw a flock of about fifty birds, the largest ever recorded in Ireland; while those which come up the estuary are single birds or small parties.

Long-tailed Ducks are sometimes very lively and noisy, playing about, taking short flights after diving, and when on the wing uttering their wild musical cries, utterly unlike the calls of any other of our native ducks. Mr. Warren never found it difficult to get a shot at them if he let his punt float down towards the birds; for, instead of diving when thus approached, they would rise and fly half-way round the boat, generally within shot.

THE EIDER DUCK. *Somateria mollissima* (Linnæus).

Rare and irregular winter-visitor; has been obtained on the coasts of all the provinces, and twice on Lough Neagh.

The Eider Duck appears in Ireland only as a straggler on rare occasions, of which more than thirty records are extant. These come from all sides of the island, but most frequently from the north coast, especially Rathlin Island, where Eiders have been shot on several occasions. It is only surprising that they do not visit it more frequently, as the distance of Rathlin from Islay - where the species breeds and is seen in large flocks - is less than twenty miles. At Rathlin, Eider Ducks have been met with in April and May, and once in September; but the bird is not known to have occurred on the main Irish coast before November, the month in which it most frequently visits this country.

In the winter of 1869-70 Eiders visited both Dublin Bay and the River Moy, as stated below:-

Kerry. - Thompson referred two birds in the Chute collection to the next species (King-Eider) from drawings of the bills, but on examining them I find that in neither specimen does the central line of feathers on the upper mandible extend half-way down to the nostrils, which proves them to be Common Eiders. They are both in brown plumage; one

was shot in the winter of 1843 at Derrynane, and the other in that of 1845-46 on Tralee Bay. An example of this species, shot near the Spa, Tralee Bay, in November 1864, is in the collection of Judge Neligan at Tralee; and a male, killed at the same place a few years later, is noticed in the "Fowler in Ireland"; another male in adult plumage was sent from Ventry to Messrs. Williams & Son in January 1900.

Cork. - A young female was shot in Cork Harbour in December 1878 by Sir R. Payne-Gallwey (Ibid.); another female, shot near Glenbrook on the Lee in the winter of 1887-88, is in the Queen's College Museum, Cork.

Wexford. - A specimen obtained from Wexford previously to 1834 is mentioned by Thompson; a female was obtained by Sir R. Payne-Gallwey from a game-dealer in Wexford in January 1876.

Dublin. - An adult male that had been wounded was captured alive near Balbriggan in May 1840 (Thompson, III., p. 114). A flock of Eider Ducks was reported to have frequented Dublin Bay after the middle of December 1869, and one of them, an immature male, was shot at Clontarf on the 27th of that month (H. Blake Knox in *Zool.*, s. s., p. 2064 [1870]). A pair were seen in Dublin Bay on 4th November 1876 by Dr. Cox, who fired at the adult male (*Zool.*, 1879, p. 483).

Galway. - In the *Field* of 6th January 1894 Mr. A. B. Walker states that towards the end of the preceding November 1893 he had met with and killed four Eider Ducks near Shire Head (Slyne Head ?), Connemara; they were stated to have been unusually dark in colour.

Mayo. - In January 1842 the Rev. H. H. Dombrian announced, at a meeting of the Dublin Natural

History Society, that he had just received two specimens from the coast of Mayo, one of which, a female, he presented to the Society (Thompson, III., p. 114). A pair of immature males frequented the Moy river and estuary during the winter of 1869-70, and remained through the following summer until 6th October 1870, when Mr. Robert Warren shot one of them on the Sligo side of the river, and presented it to the Dublin Museum; while another, probably the companion of the former, was shot near Bartragh by Captain Kinsey Dover in December 1870, and presented to the same museum (*Zool.*, 1877, p. 50). On, 2nd November 1896, a female was sent from co. Mayo to Messrs. Williams & Son for preservation.

Donegal. - The lighthouse-keeper on Inishtrahull, the most northern Irish island, reported to Mr. Barrington that on 2nd February 1890, "two Eider Ducks were on the water in the vicinity of the station"; "white with black on top of head, rare visitors" to Inishtrahull; on 5th November 1890 three Eiders were reported from this island; again, in the Migration Report from Killybegs, it is stated that two white ducks were going S." on 8th February 1894; rather large, never seen before." A female was shot near Carndonagh, Inishowen, on 2nd November 1898 (Mr. D. C. Campbell).

Antrim. - On Rathlin Island, as Mr. R. Patterson states, Eider Ducks are not infrequently seen in winter; more often on the east and south sides of the island, and when they depart it is always in an easterly direction. Four came into Ushet port, 13th September 1870, and a young male was obtained; an adult male was shot 17th May 1872, and a female on 10th November 1877; and an adult male was seen in Church Bay, 16th November 1882 (*Irish Nat.*, 1892, p. 72). In the Migration Reports we find "3rd April 1886, three Eider Duck drifting W.; 16th, seventeen on the water." A female in the Dublin Museum was procured from near the Giant's Causeway before 1890. From Belfast Lough we have the following notices:- A young female shot off Greencastle 20th October 1877

(Mr. Lloyd Patterson); two females were shot in February 1890 (Mr. Robert Patterson).

Armagh. - On Lough Neagh two in brown plumage were obtained about 12th November 1882, and are in the Armagh Museum. They were identified by the late Rev. G. Robinson, who mentioned that another was purchased from a

woman who was selling ducks (Belfast Nat. Hist. Soc., 8th January 1884, p. 19).

Among the fossil bones found in Shandon Cave by Leith Adams, and now preserved in the Dublin Museum, is a left coracoid, which has been referred to this species by Professor Alfred Newton. This would connect the Eider Duck with co. Waterford in early times.

THE KING- EIDER. *Somateria spectabilis* (Linnæus).

Very rare winter-visitor.

This arctic duck has been obtained in three or four instances, from Dublin Bay northwards as well as in Achill, ranging from 1st October to 1st March. These occurrences took place at long intervals, and none of the examples was an adult male.

Dublin. - Thompson records a female bird shot at Kingstown Harbour about 1st October 1837, which was accompanied by two others. This specimen was preserved in Trinity College Museum, but the King-Eider which that museum now contains is an adult male, and, as in the case of the other birds in the collection, is without data.

Down or Antrim. - Another female was obtained in Belfast Lough on 11th March 1850; it is still in the Belfast Museum (Thompson, III, p.116).

Mayo. - Mr. J. R. Sheridan shot an immature male on Achill Island on 12th December 1892; it was identified by A. G. More and by Dr. R. B. Sharpe,

and is now, I understand, in the collection of Mr. Edwin Bayles in Birmingham (*Irish Nat.*, 1893, p. 177).

The late Robert Gage recorded in his list of Rathlin birds, made in 1889, that a female King-Eider was shot at that island in November 1861. The specimen is not among the birds in the Belfast Museum, which formed part of the Gage collection, and the identification cannot now be traced.

The two birds obtained in Kerry, and mentioned by Thompson as King-Eiders, are of the last species.

THE COMMON SCOTER. *Edemia nigra* (Linnæus).

Regular winter-visitor to the coasts of northern Leinster, Ulster, and northern Connaught; scarcer round the rest of Ireland.

Except on Dingle Bay and north of Kerry, where a few occur, the Common Scoter is little seen on the coasts of Munster, its numbers being few and its visits irregular, but on passing the corner of Wexford (Carnsore Point) we find that Scoters, known as "Black Ducks," are observed in flocks from time to time at the lightships; to the bays of co. Dublin Scoters are more regular visitors, while large flocks resort to the Drogheda and Dundalk Bays, and still more to Belfast Lough. On the latter, Mr. Lloyd Patterson tells us that he has seen acres of water covered with these birds and with Scaups, both of which frequent the Antrim side in enormous numbers from October to April. Scoters are not considered at all common at Rathlin Island, but are met with in winter on Lough Foyle and the outer part of Lough Swilly as well as on the north coast of Inishowen (co. Donegal), and their numbers greatly increase when a severe winter occurs. Mr. Warren finds them frequenting Killala Bay every winter, their feeding-grounds being just outside the breakers, where neither punt nor boat can approach them. To Achill the Scoter is also a winter-visitor, though apparently by no means numerous; it has been observed at Inishgort to mix with Long-tailed Ducks (Migr. Report, 13th February 1896), and a few visit Connemara.

In several instances single birds have been met with inland; on the Liffey at Chapelizod and Blessington, on the Suir near Thurles, and on the Shannon near Athlone. Watters states that in one instance small flocks occurred on the inland lakes, and that on two occasions examples of this species have been shot whilst apparently searching for food along the bottoms of wet ditches and other drains, as at Beggar's Bush near Dublin. Another was caught in a fishing net on the Blackwater, Co. Waterford, more than twelve miles from

the sea; others again have been shot on Lough Neagh. Scoters have been seen in exceptional cases in the north and off the Wexford coast in May, and there are a couple of records from lightships off the latter county in April.

These birds seem able to ride on the roughest waves, floating like corks, but water-soaked individuals have been picked up in Castlemaine Bay, co. Kerry. They feed on the mussels in Dundalk Bay, and the practice of gathering these has greatly diminished the Scoters, though they are unmolested by wildfowl shooters.

THE VELVET-SCOTER. (*Edemia fusca* (Linnæus).

Rare winter-visitor.

There are some twenty records of the Velvet-Scoter from various parts of our coast, fully half of the number being from the bays of Dublin and Louth, while the west coast seems to be very seldom visited; for the only definite records relating to it are of one specimen obtained in Tralee Bay and a pair observed by Mr. Warren near Killala. Other reports of Velvet-Scoters seen on the coast of Connaught have not been supported by specimens. Sir R. Payne-Gallwey states that he obtained a couple, and had seen several others at some distance from land, but never on the west coast.

The months of occurrence given below show that this bird has visited Ireland in September, October, December, and more frequently in January, while each of the succeeding months, to June inclusive, has its record.

Kerry. - A specimen, shot in Tralee Bay, was in the Neligan collection ("Fowler in Ireland," p. 112).

Cork. - An adult male was shot near Youghal lighthouse about 1st March 1850 (Thompson, III. p. 123). Three birds were seen by the late Mr. W. W. Lloyd in the harbour of Castletownsend during December 1889, and remained there until the 15th February 1890.

One was received from Glengarifi on 26th October 1898 by Messrs. Williams & Son.

Wexford. - "This species was procured in Wexford Harbour previous to 1836" (Thompson).

Dublin. - One was shot at Clontarf on 2nd December 1833, another on the Liffey in the winter of 1837-38, and a fine male at Portrane on 13th January 1838 (Ibid.); an immature specimen was obtained at Dublin in September 1847 which, with the last mentioned was in the Museum of Trinity College (Ibid.); another in the Science and Art Museum was obtained in Dublin Bay in January 1881.

Louth. - On Drogheda Bay Montgomery obtained a series of Velvet Scoters from time to time, showing that the locality must be a favourite one-viz., one in winter 1848-49; an adult female on 10th March 1849 in Drogheda Bay (Ibid.);

three were seen about the first week in September 1850 (Ibid., III, Appendix); one, obtained in 1852, was presented by Montgomery to the Belfast Museum; and another was shot on the Boyne in the winter of 1854-55 (Proc. Dublin Nat. Hist. Soc.).

Down and Antrim. - A female, shot in Belfast Lough, was presented by Darragh to the Belfast N. H. and Phil. Society about 1886. A male was shot by Mr. Robert Patterson, also on Belfast Lough, on 3rd January 1889, and is in the collection of Mr. Lloyd Patterson, who had observed a pair off Green Island in the same bay on 6th February 1879.

Donegal. - Three of these birds remained on Lough Swilly with Pochards for several days in January 1890 during stormy weather (Hart, in *Zool.*, 1891, p. 461).

Mayo. - A pair were clearly identified by Mr. Warren among fifty Mergansers in Killala Pool on 24th June 1890 (*Zool.*, 1890, p. 354).

Others are mentioned by Thompson and Watters on the authority of Glennon, and in the Field for 18th January 1872 Messrs. Williams announced that two of these birds had been left with them for preservation.

THE SURF-SCOTER. (*Edemia perspicillata* (Linnæus).
[By ROBERT WARREN.]

A very rare and accidental winter-visitor, of which only six specimens have been obtained in Ireland.

The first occurrence of this handsome American Duck has been thus recorded by Thompson in his 3rd volume, p. 118: "An adult male was shot at Ballyholme, Belfast Bay, co. Down, on the 9th of September 1846, by Snowden Corken, Esq.; it was alone. Two of these birds had a day or two before been seen in company in the same locality." This specimen is now in the Belfast Museum.

The second occurrence was that of another "adult male, shot by Mr. E. Hanks, in October 1880, at Clontarf, co. Dublin, and afterwards presented to Mr. Bradshaw, of the Rectory" ("Fowler in Ireland," p. 112).

The third was that of an immature bird (sex -not ascertained), shot by Mr J. Dunleavy, lighthouse-keeper of the Fastnet, on the 5th November 1889, in Crookhaven Bay, co. Cork; recorded by Mr. R. M. Barrington, who has the specimen in his collection.

The fourth, an immature female, shot by Mr. Sheridan, the 25th October 1890, at Dugort, Achill Island, co. Mayo.

The fifth specimen obtained was an adult female I shot on the 19th December 1896. It was one of a pair I observed in the Moyne Channel, near Killala, co. Mayo. I first took them to be Common Scoters, but as they flew past, remarking the white marks on the head of the male, I immediately recognized them to be Surf-Scoters. After they pitched on the water I set my punt up to them, and firing my big gun, killed the female and winged the male, which I followed, and fired several shots from my cripple stopper without effect, the bird escaping owing to his expertness in diving and ducking the flash. On the 16th January following, when down Wigeon shooting, I met the wounded bird in the channel near where I had killed his companion, and although I fired my big gun at him, and three shots from my shoulder gun, he again escaped by ducking the flash. Having failed in securing such a prize by myself. I arranged with Mr. A. C. Kirkwood, of Bartragh, to come with me on the following Monday, the 18th, bringing his punt and gun, and assist in the capture. Going down the chaunel we saw nothing of the bird until the junction with the bay was reached, and there, on the side of the bank, we saw the bird resting close to the water, and Mr. Kirkwood, paddling up, easily came within range, and firing, knocked him over with a charge of No.6 shot from his 4-bore, thus securing the sixth specimen of the Surf-Scoter captured in Ireland.

The two last-mentioned specimens are now in the Dublin Museum.

THE GOOSANDER. (*Mergus merganser* (Linnæus).

Scarce winter-visitor, met with irregularly and in very small numbers, but probably an annual visitant,

The Goosander visits most parts of Ireland from time to time, but no record appears of its occurrence in western Connaught, and the few instances afforded by that province have been east of the chain of lakes between Galway and Ballina. The distribution of Goosanders obtained in the several provinces has been as follows:-

Munster 24, Leinster 30, Connaught 7, Ulster 29. Taking the several counties, Kerry affords the highest number, 10; Antrim and Down 15 between them; other counties fewer; but the distribution seems very much the same as between north and south, while it extends through the country undiminished as far as the line of the Shannon, Few if any Goosanders killed off the coast can be mentioned, though many have been obtained in bays and harbours and the tidal parts of rivers, but the majority have come from inland waters. In winters of severe frost, when other wild-fowl are numerous, Goosanders visit Ireland more than at other times; thus, in the severe season of 1880-81 they were taken on the Rivers Blackwater and Suir, and in the counties of Kilkenny, Carlow, Wexford, Wicklow, Kildare, Westmeath, and Galway. They have been met with in small flocks of seven or eight, but single birds or pairs are more frequent.

Goosanders very rarely appear before December, and reach their maximum in January. Of 77 cases, the months of occurrence have been:- October 1, November 2, December 24, January 28, February 16, March 5, April 1.

THE RED-BREASTED MERGANSER. *Mergus serrator*,
Linnæus.

Resident; breeding commonly on the larger lakes and on several marine loughs. Frequents the estuaries in winter, sometimes in considerable numbers.

This bird, locally called Shell-Duck, or Spear-Wigeon, has an extensive and increasing breeding range in Ireland, from Kerry to Donegal and Down. It nests both on marine inlets and on the islands of the larger lakes of the interior, where it is very common in summer, and it may be accounted one of our most numerous resident ducks. In the east and south-east of Ireland it is only known as a winter-visitor, but I have received alive a young Merganser about the size of a Teal, which was doubtless bred in this part of Ireland; it was taken on 2nd August 1897 on the Finisk River, co. Waterford. Breeding localities are given below:-

Kerry. - Kilmakilloge Harbour and islands on Kenmare River, Lough Currane.

Tipperary, &c. - Lough Derg, where this species has increased so much that rewards are given for its destruction by those interested in fishing.

Westmeath, &c. - Lough Ree, Lough Owel.

Meath. - Lough Sheelin.

Longford. - Lough Gowna.

Galway. - L. Corrib, where it is more numerous than I have ever seen it elsewhere; L. Derryclare and other lakes and inlets of Connemara.

Roscommon. - L. Key, L. Gara.

Mayo. - L. Mask, L. Conn, Achill Sound.

Sligo. - L. Arrow, L. Gill.

Leitrim. - L. Allen, L. Melvin.

Fermanagh. - Lower L. Erne, where it breeds commonly on the islands; Upper L. Erne, a few pairs breed.

Down. - Carlingford Lough; Strangford Lough, on several islands, on one of which six nests were found (Belfast Nat. Hist. Club); marine islands.

Tyrone. - Islands in Lo Neagh.

Donegal. - L. Derg, Lo Eask, lake near Burton Port, Ards Demesne on Sheephaven.

In winter few Mergansers are seen on their breeding-lakes, for they then betake themselves to sheltered bays, estuaries, and tidal rivers on all parts of the coast, where their numbers are augmented by arrivals from without. Thus Captain Kinsey Dover found them common on all the bays he visited where Wigeon are numerous, and on other bays besides. They are very plentiful on Lough Swilly and the marine loughs of Antrim, commonly on Dublin Bay and the inlets of the south and south-west. On Queenstown Harbour Sir R. Payne-Gallwey saw several hundreds swimming together in the severe season of 1878-79. Small parties may indeed be seen during the winter on any sheltered tidal waters, and Mergansers often wander a long way up rivers and have then been shot far inland. On Dublin Bay this is the first of the Ducks to appear in autumn and the last to leave in spring, being sometimes seen before the end of August and so late as the middle of May (Thompson, III., p. 166). The Merganser's note uttered on the wing is not unlike that of the Wild Duck, but a female in apprehension of an intruder near her nest will produce a sound between the quack of a Duck and the croak of a Cormorant.

As this species feeds on fish and crustaceans it is independent of vegetable food, and is found breeding numerously on some lakes with stony bottoms, like Lough Corrib, which are not favourite resorts of some other wildfowl, as well as on others, like Lough Erne and Lough Key, which afford a paradise for many sorts of water-birds.

The Merganser can seldom be seen resting, being most active and wary, diving incessantly for food, or swimming about, taking wing long before one approaches, it thus invariably escapes, not by diving, but by flight, which is straight and rapid.

Though eggs have been found in the very end of May, yet June is the regular breeding month of this bird, and of the many nests that have come under my observation all but one were found in the latter month. A favourite site is in the zone of rank herbage, flags, nettles or meadow-sweet, intervening between the stony shore of an island and the scrub; but it is sometimes a depression among rough gravel, with scarcely any nesting-material, and is often among tangle and bushes, under masses of coarse ivy, or in a nook or crevice under rocks or the roots of a tree, but never to my knowledge in a burrow. A well-marked but very tortuous path or run is made by the bird to its nesting-place, which is a snug hollow overshadowed by sedge or other plants, and the eggs are surrounded with the parents' grey down. These number from eight to fifteen, and Mr. Parker has seen seventeen young following the mother on the water; the pointed bills of the little ones distinguish them readily from other ducklings. It is recorded that a clutch of young Mergansers hatched by a hen used to jump upon her back, especially after coming out of the water, thus soaking the wretched foster-mother ("Derg," in Field, 24th July 1886).

When visiting this bird's breeding-haunts in June, I have repeatedly been surprised to meet with small flocks of from six to thirteen Mergansers which sometimes took flight from an island where others of their species were hatching; moreover, Mr. Warren has seen on Killala Bay, on 17th June, at least a hundred of these birds closely packed together, and swimming just outside the surf, the majority of the flock being females or immature males. Mergansers may be seen on the Moy in that month, though they do not breed nearer than Lough Conn.

The heads of the males appear brownish in June, An old female sent from Galway was examined by Mr. Dresser, who stated that he considered it to be assuming male plumage.

THE SMEW. *Mergus albellus*, Linnæus.

Rare and irregular winter-visitor, which, however, probably occurs annually.

The Smew is obtained much more frequently in Leinster and Ulster than in Munster and Connaught, and appears to be least known in the latter province. Though comparatively rarer in the south than the Goosander, yet, like that species, the Smew is found more frequently on fresh than on salt water, and has been often shot on inland lakes and rivers, as well as on bays and harbours. Like the Goosander, too, it is a midwinter-visitor, and from the scanty data of 29 instances in which the months are stated, we learn that the numbers were in December 7, January 12, February 8, March 2, and none in any other month.

Both Glennon and Mr. E. Williams have stated that the Smew is brought to Dublin nearly every winter, while in some severe seasons it appears to be comparatively plentiful. Most of those that reach the Dublin markets are from inland localities. Adult males are rare as compared with females and immature birds, and this fact may partially account for the meagreness of the records, as the small, inconspicuous females are not in much request for preservation where collectors are few.

Kerry. - Two instances ("Fowler in Irele.nd," p. 123).

Cork. - A female shot near Enniskeen 1st March 1895, the only Cork record (Mr. J. E. Longfield).

Waterford. - The Smew has occurred (Thompson, III., p. 161).

Wexford. - Two instances, in the latter of which four birds were obtained (Ibid.).

Dublin. - There are three records of Thompson and one of Watters.

Queen's Co. - A pair were shot at Granston and two on L. Annagh, one of the latter in 1894 and the other in 1897.

Westmeath. - Six were obtained at Knockdrin at long intervals, one on L. Ennell, and two near Athlone in different years.

Meath. - A male was sent from Navan to Messrs. Williams & Son, 12th January 1895.

Louth - one was obtained at Lurgan Green in winter 1832-33 (Thompson), and another on the Boyne in 1854-55 (Proc. Dublin Nat. Hist. Soc., 14th March 1859).

Mayo. - A male in the Dublin Museum is from this county. Col. Vernon informed me that when he was living on Killary Harbour he shot several male Smews in white plumage from time to time.

Fermanagh. - One specimen, at Belleisle.

Monaghan. - An occurrence about 1831 is cited by Thompson. A female was shot near Carrickmacross in December 1854 (Proc. Dublin Nat. Hist. Soc., 14th March 1856).

Armagh. - Four notices in different years all relate to the southern part of L. Neagh, near Lurgan.

Down. - Thompson mentions two instances on tidal waters.

Antrim. - A male, one of a pair seen, was killed on a small river near Doagh (Ibid.).

Donegal. - Two were shot at Inch in January 1891 (Leebody, in *Irish Nat.*, 1892, p. 175).

Besides the above, Thompson mentions three Smews sent from the Shannon in January 1829, and a female was received by Messrs. Williams & Son on 27th February 1895, also from the Shannon.

THE HOODED MERGANSER.

Mergus cucullatus, Linnæus.

Very rare and accidental visitor from America.

There are four or five Irish records of this Trans-Atlantic species. The first, as Thompson informs us, was shot in winter, about the year 1840, at Dingle Bay, co. Kerry, by Dr. Chute; this specimen is stated to have been in the collection at Chute Hall ("Fowler in Ireland," p. 121). I failed, however, to find it there in 1893, when I inspected that collection by Mr. Chute's permission.

Watters stated, on the authority of Glennon the bird-presenter, that an immature female, obtained on a lake near Knockdrin, co. Westmeath, was in the collection there; but I also failed to find this bird among the remains of Sir R. Levinge's collection, now in the Christian Brothers' Schools at Mullingar, nor does it appear in the catalogue of that collection, nor in the Knockdrin Game-book, kept since 1837.

There is, however, a beautiful adult male in the collection of Sir R. Payne-Gallwey, who killed a pair outside the mouth of East Ferry, Queenstown Harbour, in the severe frost of December 1878; these he had previously been there in company with Red-breasted Mergansers, but could not succeed in approaching until he found them alone. He killed another in a still more severe season, after a heavy north-west gale, in January 1881, in the Shannon estuary, off Ballylongford, co. Kerry; this bird was shot, as well as the two former, with the swivel-gun, and a number of Diving-Ducks and Mergansers with it. Two of the examples were females. Mr. J. G. Millais has another Hooded Merganser, said to have been killed in Tralee Harbour in 1880, but of this statement he has been unable to obtain complete proof.

Sir R. Payne-Gallwey thought that the birds he afterwards shot flew faster and with a more darting motion than other Mergansers, and dived with equal facility; but one which he crippled made no effort to dive; it swam low, like a wounded Teal; with its crest laid flat and smooth, the head looking small and black, not bushy as it usually does.

Order COLUMBÆ.

Family COLUMBÆ.

THE RING-DOVE. *Columba palumbus*, Linnæus.

Resident, numerous and spreading, being now generally distributed, except in the barest districts. Large flocks visit Ireland irregularly in winter.

The Ring-Dove or Wood-Pigeon is one of our commonest and most conspicuous birds, attracting attention by its powerful flight or welcome cooing. It is increasing in Connemara wherever there are any plantations, but in Achill it is only known as a rare straggler in autumn, while in the bare country round Belmullet it seems to be unknown. As it is seldom distinguished in the Migration Reports from other "Pigeons," we depend, for proof of the immigration of large flocks in winter, upon inland observations made in the eastern and midland counties. These flocks vary as to the localities they visit, the time they remain, and the seasons in which they occur, being doubtless influenced by the rigour of the weather in the countries whence they come, and also by the abundance of beech-mast and other food here. They diminish, but do not immediately disappear, in February and March, when the resident birds have paired and commenced to coo, and in 1886 flocks were observed to hold together in the north until the middle of April.

The cooing has been heard by the Rev. C. Irvine every month in the year, but is only usual from February until July; it may be heard occasionally at night. The Ring-Dove has no alarm-note, but the loud flapping made when taking flight serves the purpose, though the bird can fly from its nest as quietly as an Owl.

Mr Blake Knox's observation of Ring-Dove, resorting to the shore to eat sea-weed and to drink sea-water has been often quoted, and Mr. Barrington has found that flocks do the same damage to corn and turnips that they perpetrate in England; the complaint against them here chiefly relates to garden-produce. I have seen several of these birds fluttering low about the Cappagh lake, occasionally alighting in deep water, and taking flight after a few seconds.

Mr James Johnston found a nest on 15th February with two eggs, and he shot a young bird about a month old on 24th December, but Ring-Dove, rarely breeds before March or later than September. They are found in

summer on Lambay island, where they are said to build among ivy on the cliff. In a bare district near our coast a nest we discovered in an earth-cliff flanking a small river-course, and Mr Pentland has found another nest on a bank at the foot of a thorn-tree. A yet stranger instance was reported by Mr. Witherby (*Zool*, 1895, p. 232), who was walking round one of the island, of Lough Corrib, where Ring-Doves commonly breed on the low tree, or bushes when one of these bird, rose from among some tall heather, in the midst of which he found, on the ground, the nest, composed of a few sticks, and containing one egg, while at the other side of the island he found another nest, with a young Ring-Dove, in an exactly similar position. As regard, these cases it should be remembered that several birds which ordinarily build in trees do so on or near the ground on western lake-islands.

This species has been known to interbreed with the domestic Pigeon, but the offspring were believed to be infertile (Mr. Pentland). A white specimen has been noticed in successive winter (Sinclair).

THE STOCK-DOVE. *Calumba œnas*, Linnæus.

Resident and increasing in parts of Leinster and Ulster; a bird of recent introduction.

The first Irish-taken Stock-Dove, were announced from co. Down in 1875 (Proc Belfast NH and Phil. Soc., March 1876); in 1877 a pair bred near Comber in that county, and the same season other, were found nesting in the mountains of Louth, and brought out their young (Lord Clermont, in *Zool*, 1877, p. 383). In 1888 a bird was shot at Brockley Park, Queen's Co., where another was discovered hatching in 1896; and in 1889 eggs were found in Lord Massereene's demesne, co. Antrim (*Zool*, 1890, p. 275), while in the same year, 1889, Stock-Doves were observed at Glendalough and Powerscourt, co. Wicklow. In this latter locality two successive broods were reared the next year, and Powerscourt has since then been a regular resort of the species. In 1890, also, the eggs were taken in co. Armagh, and the birds noticed at Geashill, King's Co., where the first nest was found in 1897. At Oak Park, Carlow, Stock-Doves were seen in 1893, and were found breeding there in 1894. In 1896 birds were observed by Mr. Hibbert on the borders of Clare and Galway, where he has noticed them since. This is the first locality west of the Shannon the Stock-Dove is known to have reached, but residents in intervening places have announced this bird from Tipperary, King's Co. and Queen's Co., while in those counties previously mentioned the species has increased, so that Mr. Young has seen as many as twenty-five birds in a flock at Brockley; specimens have also been shot at Navan, co. Meath, and at Malahide, co. Dublin, where a flock of twenty remained for about a fortnight in November 1893. As the latter place is on the east coast such a flock may have crossed from England. Mr. Digby, of Geashill, thinks that the first individuals he observed in King's Co. came with migratory winter flocks of Ring-Doves, and Mr. Barrington received a specimen on 19th October 1897, which was obtained at the Tuskar Lighthouse. The present range of the Stock-Dove as known in Ireland may be said to extend from co. Clare to co. Antrim, but new localities may soon be heard of.

In the districts where this bird is found a very few individuals are met with, associating with Ring-Doves, from which they separate on taking flight, when their smaller size and more rapid wing-strokes distinguish them; and the peculiarity of the note is also remarked.

In Wicklow and Louth Stock-Doves breed in crevices in the mountain-cliffs, and on the Mourne Mountains in or near rabbit-holes or under furze-bushes at a height of eight hundred feet on the steep slopes; at Oak Park the nest was in an old ivied stump, and at Emo Park hollow trees are used, while Mr. Parker has found a pair nesting in the dense growth of a lime-tree at Castle Lough on Lough Derg.

THE ROCK-DOVE. *Columba livia*, J. F. Gmelin.

Resident in the cliffs on most of the rocky parts of the coast.

The Rock-Dove is indigenous to Ireland, breeding more or less commonly in all the maritime counties except Dublin and Louth; the coast of the latter is flat and unsuitable to the bird's habits, but on the Dublin coast it was exterminated in the time of Montgomery, who remembered it to have nested in considerable numbers on Howth, Ireland's Eye, and Lambay (Proc. Dublin N.H. Society, May 1852). Bray Head and

Wicklow Head, however, are still breeding-ports, as well as the Saltee Islands off Wexford, where the Rock-Dove nests in caverns in the boulder-clay, as well as in the rocks. It is a common species along the cliffs of Waterford and Cork, but among the tremendous precipices of the west and north coasts and their islands we find this bird most numerous, It does not seem to breed on the Tearaght, though visiting that island in winter; but it nests on Inishtooskert, another of the Blaskets, and is abundant about Sybil Head and elsewhere on the Kerry coast. It also nests plentifully in the cliffs at the mouth of the Shannon, as well as in those at the sides of Lough Swilly in Donegal, and still more so on many exposed islands, such as High Island, Achill and Rathlin, and even the caves of Inishtrahull are among its breeding-resorts (Migration Reports, 1886-87).

Thompson found Rock-Doves in mountain-cliffs in Down and Antrim two miles from the sea, as well as in caves of the limestone tract between Loughs Corrib and Mask, near Cong; no recent case, however, of this species breeding inland has come to my knowledge, and it has probably been driven from such localities, as the Chough has been from most of its mountain haunts.

Rock-Doves nest indifferently both in high and low cliffs, provided these afford quiet caves, but however lofty the cliff may be these birds prefer a low elevation to the upper part of the precipice; in the caves which they frequent they spend much of their time and breed on ledges far within the gloom, several pairs in the same cavern.

On the Waterford coast two broods, if not three, are reared in the season, the first eggs being laid in April; on 26th June three clutches were taken from nests that had contained young on 12th May, and I have known a nest to contain eggs on 13th September.

Flocks of Rock-Doves, associating with domestic Pigeons, frequent the cornfields in autumn, and at other times seeds such as those of the bird's-foot trefoil are eaten. The Rock-Dove's power of flight is illustrated by an anecdote thus communicated by Mr. Philip Gough, a resident on our coast:- "I was leaning on the cliff-fence looking out to sea, when I suddenly heard something cleaving the air; three birds glanced past me, and dashed down-wards to the rocks below. In an instant a rock that ran into the sea was reached, and one of the birds shot, as it were, into the heart of the stone; the other two skimmed the rock and rose into the air; then I recognized these two birds as Peregrines. Wishing to know what the third bird was and what had befallen it, I went down to the rock; in the centre was a fissure which terminated in a crab-hole, and in this was a Rock-Pigeon panting heavily, and with its eye-balls starting from their sockets."

THE TURTLE-DOVE. *Turtur communis*, Selby.

Annual visitant in very small numbers, chiefly occurring in May and June, and to a less extent in September; most frequent from Wexford to Kerry.

The Turtle-Dove can scarcely be enumerated among our regular summer-visitors, for though one or two birds at a time may be seen nearly every year in the southern maritime counties, they usually disappear after a brief sojourn without giving evidence of breeding; some, however, are observed again in September or even later in the autumn, and among these several cases of young examples have occurred.

This species has often been taken or observed on the Tuskar and at other points on the south coast of Wexford, and that county is evidently a customary landing-place on migration; while the instances of the bird's occurrence in Wexford, Waterford, Cork and Kerry form about 60 per cent of those recorded from the whole country. The frequency of the Turtle-Dove along the southern fringe of Ireland, and the extension of its visits to the neighbourhood of Dingle, where it has repeatedly occurred, are features which we find similarly in the distribution of some other scarce migrants, such as the Black Redstart, the Osprey, and the rarer Herons. These birds, on striking our south-east coast, seem to wander south-westward until some of them reach the extreme limits of the land in that direction; may, some of the earliest notice, of this species, on 20th and 23rd April, have been from the Bull Rock and the Tearaght. The Turtle-Dove has also occurred not infrequently in co. Dublin, less often in Down, Antrim, Donegal, Sligo and Galway, but no maritime County, except perhaps Clare, is without its records of this bird; it has been taken, too, on such remote rocks as the Fastuet, Slyne Head and Black Rock, Mayo, beside, those mentioned above. It is rare in inland counties, for these only yield 15 out of 140 instances, or less than 11 per cent.

In 84 cases the month of occurrences have been follow:-

January.....1	April.....4	July.....3	October.....4
February.....-	May.....38	August.....3	November.....4

March.....1 June.....20 September..10 December.....1

Besides the above cases, Turtle-Doves are repeatedly said to have occurred in "spring," "summer," or "autumn."

In one instance four birds were seen together but Turtle-Doves are usually met with singly or in pairs, and are very shy, so that it is difficult to say that they may not have often evaded observation while breeding. Thompson was informed that a pair had bred at Derryquin in Kerry, and another pair near Downpatrick, one of these having been afterwards killed as late as 12th November; Watters also stated, on Glennon's authority, that a female, shot early in June in co. Wicklow, contained eggs in the ovary, and Mr. Williams has obtained young birds with vestige, of down still adhering to it. For these reasons the Turtle-Dove has been included among the birds that have bred in Ireland, though it is far more usually a straggler on migration or bird of double passage.

Order PTEROCLETES.

Family PTEROCLIDÆ.

PALLAS'S SAND-GROUSE. *Syrreptes paradoxus* (Pallas).

Rare and irregular visitor.

The visits of this bird to Ireland have belonged to those "remarkable immigrations which have from time to time spread from Central Asia to Western Europe.

The first occurrence on record was in June 1863, when a few of these Sand-Grouse were killed in the counties of Dublin,

For Passenger-Pigeon, see Appendix.

Fermanagh, and Donegal; while, in October 1876, a pair were obtained in co. Kildare.

In May and June 1888 the immigration was much more numerous and widespread; extending through northern Leinster. Ulster and Connaught to Belmullet, at the north-western extremity of Ireland; a considerable flock, too, was met with in Clare, and another flock was reported from Mallow (co. Cork). With these exceptions none were announced from Munster, and some that visited Wexford were the only Sand-Grouse heard of in the south of Leinster.

Dr. Scharff, in his valuable paper (Proc. Royal Dublin Society, 12th December 1888), points out that after the first visitation in May and June had passed over, other birds occurred in July and more in November; some of these may have been fresh arrivals. The total number of birds which were seen that year in different places amounted, according to published reports, to more than a hundred, but this probably represents only a portion of those that reached Ireland in 1888. There is nothing to show that any of them bred in the country, and by the end of the year they had all disappeared.

Immigration of 1863. - A Sand-Grouse was found killed near Balbriggan, co. Dublin, in June (Proc. Dublin N. H. Soc. 4th December 1863); two were seen, and one of them, now in Armagh Museum, was shot at Ross Lake, co. Fermanagh, on 8th June (Lord Clermont, in *Zool.*, 1864, p. 8934). A flock was observed, and two birds were shot, at Naran, co. Donegal, and soon afterwards thirteen or fourteen birds, probably of the same flock, were observed on the mountains, and then on the sands near Drumbeg, Killybegs. On this occasion two were killed and one wounded by Mr. W. Sinclair, who presented the latter bird to the Regent's Park Gardens.

In 1876 a male and female were killed at Kilcock, co. Kildare (Williams, in *Zool.*, 1877, p. 24).

In the **migration of 1888** a good sized flock was seen, and two females were shot, near Carrigaholt, on the Clare side of the Shannon's mouth, on 20th May. In the same county, which thus furnished some of the first instances, a beautiful male was obtained during the second week in November (Williams, in *Zool.*, 1889, p. 34); near Mallow about six were observed in June (Dr. Scharff, *vide* Mr. F. R. Rohu).

In Leinster one of three noticed was shot early in June at Rosslare. Wexford, and twelve or fifteen were seen there soon afterwards; near Tullamore, King's Co., five were seen, one shot, on 20th May; some were noticed in Westmeath in June. In co. Dublin about fifteen frequented the Portmarnock sand-hills for six weeks; and to this flock may have belonged the three seen near Malahide on 4th June, and one killed at Clontarf on 16th June. Fourteen were observed and four killed at Mornington, on the Meath coast, on 11th July (Dr. Scharff).

In Connaught sixteen were seen and two shot at Woodpark, co. Galway, on 8th June (Rev. P. A. Keating); another was shot near Portumna in the end of November (Scharff); four were seen, two shot, near Athlone, in co. Roscommon, on 17th June; in the neighbourhood of Belmullet, co. Mayo, a male and female were shot early in June and two males in July, besides others which were seen there.

In Ulster a male was shot near Killough, co. Down, on 28th or 29th May; three on the Copeland Islands; while on 20th November four were seen and two were shot at Kircubbin in the same county, and another on 3rd December in that locality. Dungannon, co. Tyrone, afforded another example, and one was shot in co. Londonderry about the end of May, while Sir Douglas Brooke saw nine birds together in co. Fermanagh.

Order GALLINÆ.

Family TETRAONIDÆ.

THE RED GROUSE. *Lagopus scoticus* (Latham).

Resident on the many mountain ranges and also on the red bogs of the central plain, breeding in every county.

Though thus widespread on the heath-covered lands of Ireland, and fairly common from a naturalist's point of view, Grouse do not abound on Irish moors as they do under stricter preservation in Scotland. The letting of grouse-moors is by no means general in Ireland, as proprietors more usually reserve them for private use or neglect to preserve them effectively; accordingly the enemies of game-birds, such as Grey Crows and Magpies, are common. The burning of gorse and heather on mountains, too, is a very frequent practice, even in the spring, and where this does not destroy the eggs or young it deprives the birds of shelter. On well-preserved estates, however, Grouse have increased, as for instance in parts of Connemara; but in Achill they are kept down by numerous foxes and winged enemies.

Grouse are not confined to the higher lands, but are found on the great flat bogs of Queen's and King's Counties, Westmeath, Eastern Galway, and other similar tracts; the larger patches of brown on the maps in this volume indicate in a general way the haunts of this bird.

Mr. G. H. Kinahan informs me that he has seen large flocks of Grouse, consisting of several packs, on the Munster and Connaught mountains, but not in Ulster.

In exceptional frost and snow, Grouse have been seen picking on the manure-heaps at the cottage-doors in the mountains, or have been found on low coast-lands like the Warren at Donaghadee and on the Copeland Islands; and though not given to migrating round the coasts, stragglers have visited Black Rock, Mayo, and Inishtrahull (Migration Reports).

It has been remarked that Irish Grouse are lighter in colour, especially on the under-parts, than those of Great Britain. Some striking variations have occurred; thus a very light-coloured bird, of which the quills were much paler than usual, was received by A. G. More from Mayo and identified with the form called *L. persicus* by Gray; then the Dublin Museum contains a specimen from Roscommon in which the rufous colouring is entirely replaced by white, the black markings remaining as usual.

Mr. Williams describes (*Zool.*, 1889, p. 393) an old male Grouse of a bluish-white, through which the ordinary markings were discernible; while another from Abbeyleix, described in the same notice, was snow-white, except two patches of the ordinary colour on the back and nape. Mr. A. J. P. Wise informs me that he saw a very dark old male, shot in Kerry, which reached the unusual weight of two and a-half pounds.

THE CAPERCAILLIE - *Tetrao urogallus*, Linnæus - abounded in the woods of Ireland, according to Giraldus Cambrensis, a statement borne out by Willoughby and O'Flaherty in the seventeenth century, but the notices we have of this fine bird in the following century show that it then gradually became extinct. The Irish Statutes, II Anne, ch. 7, recite, "that the species of cocks of the wood (a fowl peculiar to this Kingdom) is in danger of being lost." In Dr. Smith's volume on Cork he mentions "*urogallus sive Tetrao major*," and observes: "This bird is not found in England and now rarely in Ireland since our woods have been destroyed." Pennant (1776) states that "about the year 1760 a few were to be found about Thomastown, county of Tipperary" (*British Zoology*, I., p. 302). A Catalogue of the Birds of Ireland, by Dr. Patrick Brown, who died in 1790, showed that this bird still existed in his time (Proc. Dublin N.H. Soc., 18th December 1851); but though "Wild Turkeys" are

subsequently spoken of we have no distinct evidence that the Caper-caillie survived here as late as the end of the eighteenth century.

THE BLACK GROUSE - *Tetrao tetrix*, Linnæus - has been frequently introduced into Ireland, and Mr. Barrett-Hamilton gives details of these attempts, made in the counties of Limerick, Wicklow, Sligo, Tyrone and Antrim (Irish Nat., 1899, p. 37); while in "Dr. Pococke's Tour" (1752), as well as in Thompson's "Natural History of Ireland," the repeated introduction of this bird into Antrim is mentioned. In none of these cases, however, has the Black Grouse ever become established in this country.

A right humerus of a Gallinaceous bird was found by me in the superficial deposit in the bone-cave of Ballynamindra, and was considered by Mr. Lydekker to agree with a corresponding bone of Black Grouse (*Ibis*, 1891, p. 392); but from careful comparisons of the former, kindly made at my request by Mr. E. T. Newton and Dr. Forsyth Major, this bone is found to resemble the humerus of a small domestic fowl far more closely than that of a Black Grouse, and has been labelled in the Dublin Museum accordingly; it was probably brought into the cave in recent times by a fox. It therefore proves nothing as to the Black Grouse in Ireland.

THE PTARMIGAN - *Lagopus mutus* (Montin) - has also been introduced without success into Ireland, some ten or fifteen birds having been turned out in Inishowen, co. Donegal, but they soon disappeared (Hart, in *Zool.*, 1891, p. 379).

Some bones of Grouse in the Dublin Museum, found in the Shandon bone-cave near Dungarvan, have been regarded as proofs of the former existence of Ptarmigan in Ireland (Lydekker, in *Ibis*, 1891, p. 392), but Professor Alfred Newton said, after examining them: "This last (example) is very small, and might be *Lagopus mutus*, only I have no evidence that this species was ever in Ireland, and I think that a hen Grouse might be found as small, though I do not possess one that is" (Trans. R. Irish Academy, Vol XXVI. Pt. V., p. 229). I have seen these bones submitted by Dr. Scharff to Dr. Forsyth Major for comparison with recent bones of Red Grouse and Ptarmigan, and the conclusion then came to was that nothing more could be said on the subject than Professor Newton had stated above; the bones were certainly small for Red Grouse, but in some characters agreed better with them than with those of Ptarmigan. We cannot, therefore, rely upon these remains to prove the former existence of Ptarmigan in Ireland.

Family PHASIANIDÆ.

THE PHEASANT. *Phasianus colchicus* (Linnæus).

Resident and breeds in every county, but maintains itself with difficulty if not preserved.

Giraldus in the twelfth century and Higden in the fourteenth mention the absence of the Pheasant from Ireland in their times, but at the end of the sixteenth century it appears to have become numerous from the statements of Payne and Moryson. At the present day there are preserves in every county, and in them alone it is plentiful, but that it can maintain itself in favourable places is shown by the experience of Mr. Kane in co. Monaghan, who states that Pheasants have bred in his oak-wood at Creaghan for forty or fifty years without artificial interference. Pheasants when once introduced into a locality may be found there many years after they have ceased to be nurtured and fed, but under such circumstances they usually dwindle in numbers and wander away. This wandering propensity has occasionally led birds even to Achill and Rathlin. In "Smith's Kerry," 1756, it is stated that Pheasants were then to be seen in that county in greater numbers than in the more cultivated counties of Cork and Waterford, and Sir H. Gore-Booth states that wild Pheasants do fairly well at Lissadell on the Sligo coast at the present day.

Mr. James Dickson has observed a Pheasant, when under the "point" of a dog, hide its head among the withered leaves, as the Ostrich is fabled to do in sand. I am informed by Mr. E. Williams that there are now very few places in Ireland where the old brown Pheasant exists uncrossed with the Chinese or Ring-necked bird; one of these places being Castle Archdall in Fermanagh, while another is Mount Louise in Monaghan. As thousands of Pheasants have been sent for preservation to Messrs. Williams & Son, taken from all parts of Ireland year by year, no one is better qualified to speak on this point.

THE PARTRIDGE. *Perdix cinerea*, Latham.

Resident and breeds in every county.

Though the Partridge has so extensive a range it is very unevenly distributed in Ireland, being numerous in Tipperary, King's and Queen's Counties, Kildare and Meath, but scarce in the west of Connaught and Donegal, where moors and mountains prevail. Though fluctuating in numbers, according to the serenity or wetness of the season at breeding-time, Partridges have long been said to be diminishing in Ireland. Two causes can be easily assigned for this: the discontinuance of wheat-growing and the use of breech-loaders combined with poaching. In Louth the decrease is attributed by Mr. Pentland to the enormous numbers of Rooks which rob the nests of game; but apart from causes of this nature, Ireland, owing to the wetness of its climate, is less favourable to the increase of the Partridge than Great Britain, and there are few districts in which it is easy to find more than three coveys in a day's shooting, while these have often so much furze and rough ground in which to conceal themselves that the sportsman suffers under disadvantages. Very large coveys are rare in Ireland, where this species is evidently less prolific than in the corn-growing parts of Great Britain, in which, also, preservation is maintained at so high a standard.

Though no transmarine migration of this species is known, individuals have been reported from the Teagarth, the North Arklow lightship, and several times from Rockabill; but in some of these cases Quails may possibly have been the birds observed (Migration Reports). On Rathlin Partridges are never seen except in very hard weather, as in December 1878, when they probably took refuge there from the snow on the mainland.

The favourite haunts of these birds in Ireland are small farms where there is always some untidy tillage, for instance, potato-fields in which *Persicaria* and similar weeds are plentiful, and they prefer such to fields of turnips; but while the newly-cut stubbles are still full of scattered oats the covey of the locality visits these in the early mornings, and to find or trace them there one should visit the ground from 6 to 8 A.M. In the middle of the day they hide away and it is most difficult to find them, but in the evenings they commence to call and fly forth again to the stubbles, retiring at dusk to some furzy field, where they sleep in a cluster. During October Partridges become very wild and uncertain in their places of resort.

I have seen a Partridge face a dog in a menacing way to defend her newly-hatched brood.

THE QUAIL. *Coturnix communis*, Bonnaterre.

Common until 1850 or later, when it was found at all seasons; it then diminished in numbers until it reappeared temporarily in 1892 and some subsequent summer's.

The history of the Quail in Ireland is peculiar. Giraldus in his "Topographia Hibernie," and other writers subsequently, stated that it was found in considerable numbers in their times; and, possibly owing to the growth of wheat, Thompson found it to be increasing in 1831, the greatest abundance being probably attained before 1845. In co. Sligo, however, Colonel Ffolliott stated that Quails were almost unknown in 1840, and that they became numerous during the next ten years; while five to ten brace were said to be a usual bag for a day near Easky in another part of Sligo. The extensive growth of wheat, leaving stubbles full of weeds, in the early part of the century, and the multiplication of potato-gardens up to the time of the famine (1846-48), were facts in favour of this bird at that period, and bevvies of Quails used to be met with commonly through the winter months in every cultivated district; this species was then considered more numerous than the Partridge, and appeared to be resident from its abundance at all seasons. Several nests have been found in one field in those times, and Thompson gives some statistics of the numbers sold in Belfast in winter. The birds often frequented rough elevated ground full of furze, but were particularly attached to the small holdings of the peasantry, where they could feed on the seeds of various weeds and lurk in the headlands and straggling fences. In such situations, Quails were to be met with on the edges of the bogs, but did not resort to the latter; consequently their haunts were circumscribed in those western counties which are chiefly unreclaimed, but whether in Kerry or in Mayo they were common on cultivated ground. Maritime counties were frequented as well as inland districts; thus northern Tipperary and the adjoining counties abounded in Quails and so did Louth and Antrim, and it would be hard to say whether they were most common in the province of Munster, of Leinster, or of Ulster.

After the famine, much of the tilled lands were turned into pasture or reverted into moor; and about 1850-53 I heard an old sportsman remark that Quails were then much less frequently met with in co. Waterford than

they had been, while the Rev. C. Irvine dated their decrease in co. Tyrone from 1848. Still they continued common up to about 1860, and I can remember their frequent calls during August 1858; but in the "sixties" there was a steady decrease, which advanced during the "seventies," when the occurrence of a Quail became a fact to be noted, except in such favourite counties as Louth, where Mr. Barton saw young Quails from 1870 to 1879, and in 1878 two beavies were met with the same afternoon in co. Wexford.

After 1880 the Quail was generally looked upon as extinct in Ireland, though there are a few notices of its occurrence in each province, and Mr. Barton saw a young brood in the north of Donegal in 1882, while in the southern part of co. Dublin Mr. Williams knew of a nest in 1891.

The next two summers of 1892 and 1893 witnessed the reappearance of the Quail in many parts of Ireland, and specimens were taken in both these seasons at Wexford light-stations (Mr. Barrington); the visitation of 1892 was not numerous; but was observed from the south to the north of the country as well as in Great Britain. In 1893 the immigration was on a larger scale, and was reported from eighteen counties distributed in all the provinces, while the birds were known to have bred in Louth, Fermanagh, and Antrim; this coincided with a similar increase reported in the summer of 1893 from many counties of England and Scotland, so that the movement embraced both islands. In the two following summers of 1894-95 Quails were again very scarce, but they appeared in some numbers in 1896, though not to the same extent as in 1893; in Cork, however, they were reported to be pretty general in 1896, and quite a number were heard in Antrim; eggs were found in Dublin, and young killed in Down. Since then few notices of Quails appear, but Mr. Moffat, in co. Wexford, heard them calling almost incessantly on the evenings of 7th and 8th June 1899, while he was walking about the country, and some of these birds evidently remained there that season. In his thoughtful paper on the Quail in Ireland (*Irish Nat.*, 1896, p. 203), Mr. Moffat draws attention to the smallness of the rainfall in co. Wexford during the springs of 1892, 1893 and 1896, the years marked by the late visitations of Quails. It would be interesting to know if those seasons partook of the same dry character throughout Western Europe, as the causes of an unusual migration are rather to be sought for in the countries from which it originates than in those to which it is directed.

Though Quails have occurred often during the last decade in spring, summer and autumn, winter records for that period seem wanting in Ireland, so that the species appears to have lost its resident character here, and even its summer visits have become uncertain. The decrease of the Quail, which has gone on with fluctuations for half a century, cannot be sufficiently explained by the conversion of tillage into pasture which has taken place, for plenty of ground abounding in the weeds of cultivation still exists; the wholesale netting of Quails on the spring migration in Mediterranean countries has doubtless more to say to their failure. I found these birds used for food in enormous numbers in Rome in May 1862, and at the present day the London and Paris markets are largely supplied with them in spring, while on one occasion a vessel arrived at Marseilles with 40,000 Quails on board.

Repeated attempts have been made to reintroduce Quails, and many have been let out in different parts of Ireland from time to time, but they disappeared in every case. This species has been found to revisit a favourite spot with remarkable regularity year after year.

Order GRALLÆ.

Sub-order FULICARIÆ.

Family RALLIDÆ.

THE CORN-CRAKE OR LAND-RAIL. *Crex pratensis*.
Bechstein.

Summer visitor, common and widespread, remaining occasionally in winter.

This well-known bird is fairly numerous in every part of Ireland, except on the unreclaimed moors and mountains, and its breeding-range extends into every county and to many of the marine islands; among the latter I may mention the Keeraghs, small islets off Wexford, where the Corn-Crake nests annually in rank grass among the colony of Terns, and it also breeds on Dursey Island, the Arran Islands, Inishbofin, Achill, Inishtrahull, Rathlin and the Copeland Islands, while it has often visited the Skelligs and the Tearaght. Though the latter is our most western point, a wing of a Corn-Crake, killed by a Peregrine, was picked up so early as

19th April. This bird is common in the cultivated portions of the western coast-lands, as in Connemara, the Mullet Peninsula, and the district towards Naran in western Donegal, showing that maritime localities devoid of trees are as well or better suited to its habits than counties rich in timber. It is to be found on flat, sedgy island in the larger lakes, where one cannot walk with dry feet, and I have seen it quite at home among the buildings and statues on Station Island in Lough Derg, co. Donegal, before the annual arrival of the pilgrims.

The Corn-Crake varies considerably in numbers from season to season and from one locality to another. Its note is usually first heard during the last ten days of April, but Mr. Warren has more frequently remarked it near Ballina early in May, and so has the Rev. C. Irvine in a high, exposed parish in Tyrone. There are several records of this bird's arrival between the 10th and 20th April, though only one for the first week in that month, when Mr. Douglas-Ogilby was shown on 7th April a specimen that had been sent from Stewartstown, co. Tyrone; an earlier notice still is furnished by the Migration Reports, where we find that a bird was caught on the Tuskar on 28th March 1884. Among entries in these reports we find that corn-crakes frequently occur at the Tuskar and other Wexford light-stations in the end of April or the beginning of May; thus at the South Arklow Lightship, on 5th May 1888, "hundreds of Corn-Crakes were about the light from 10.30 P.M. to 12.20 A.M., and went off N.W., flying low"; again at the North Arklow Lightship, on 16th May 1893, a large number were about the ship from 9 P.M. until midnight. The capture of these birds at isolated rock-stations off Ireland has been thus alluded to in the Migration Reports, 1886, p. 5: "The repeated occurrence of the corn-crake several miles from shore -killed striking against lanterns between 100 and 200 feet above the sea-level-must satisfy the most sceptical that this species can fly at a high level with great power and velocity."

The following is a record of disaster on migration:- Mr. Norman Thompson was returning from Bordeaux to Dublin about 1st May 1867, and after passing the Tuskar he observed a number of drowned Corn-Crakes, which he estimated at fifty, strewn in the water, from a point opposite Courtown Harbour until the vessel had passed Wicklow Head; the weather had been foggy.

Our corn-crakes usually leave us by the beginning of October, though in numerous cases they have been taken in November, December, January, and February, but there is nothing to show that any have remained until March. These winter birds have been found hiding in holes and chinks, but the torpid condition attributed to them may have been that simulation of death which the corn-crake is said to adopt when seized.

The craking note which gives us the first intimation of arrival is continued into July, when it becomes less frequent, and has been repeatedly heard in August; it may be heard by day and by night, and, though usually uttered from a concealed position, I have seen a Corn-Crake standing openly in a field before a house in Donegal while it craked loudly. Mr. H. M. Wallis remarks how bold and frequently seen these birds are in western Donegal. Another cry is sometimes uttered like the squeal of a trapped rabbit, and in one case the bird, which produced it in a suppressed tone, was approaching its hatching mate. I have observed a Corn-Crake jumping up and screaming in great excitement, as though fighting with something, about a particular spot in a meadow where I then found its nest with eggs and a newly-hatched young bird that a rat had just destroyed; another Corn-Crake with young flew at a dog to defend them.

The eggs are sometimes laid in the end of May, more usually in June, and occasionally in July; they number eight to eleven, but eighteen have been found in one nest in Fermanagh, probably the produce of two females. In one rare variety, besides the ordinary lilac and ruddy spots, are a number of short, red, hair-like streaks pointing in different directions.

A Corn-Crake shot at Abbeyleix was snow-white, with the exception of two patches of the ordinary colour in the middle of the back and nape.

THE SPOTTED CRAKE. *Porzana marnetta* (Leach).

Rare visitor, chiefly in autumn; has bred in Roscommon and probably in Kerry.

Though rarely met with, the Spotted Crake is recorded from all the provinces, most frequently from Munster and most rarely from Connaught; while fourteen maritime and seven inland counties yield notices of it as follows:- Kerry (7), Cork (9), Waterford (7), Clare (1), Tipperary (3), Wexford (3), Wicklow (1), Dublin (3), Queen's Co. (3), Westmeath (1), Louth (3), Roscommon (2), Mayo (1?), Sligo (1), Fermanagh (3), Armagh (1), Down (5), Antrim (5), Londonderry (1), Tyrone (2), Donegal (2); the two records from Roscommon indicate that it was formerly resident there, but the only other notice of it further west in Connaught is from Eagle Island, of a migrating bird in April whose identification was not proved. The three southern counties of Kerry, Cork and Waterford afford 36 per cent of the total records, and though the maritime counties in which it has

been found are as two to one of the inland counties, the latter are sufficiently numerous and dispersed to show that the Spotted Crane is more than a mere wanderer along our sea-board like the Black Redstart or Spoonbill.

Forty-four occurrences of this bird took place in the following months:-

January.....-	May.....1	September.....11
February.....1	June.....-	October.....13
March.....1	July.....-	November.....4
April.....1or 2	August.... 9	December.....2

This shows that Spotted Crakes are chiefly met with when the breeding season is past, in August, September and October, that the numbers falloff in winter, but that a very few occur in spring months. The want of records for June and July cannot be taken as conclusive proof of the bird's absence in those months, for the eggs were found in one instance, and as this is a species which loves to skulk in marshy herbage, and hates to show itself on the wing, it may well escape notice in summer; but with August flapper-shooting begins, and from the time that the Spotted Crane's haunts are invaded by the sportsman many records of it appear; these are most numerous for October, but there is very little evidence that it winters in Ireland.

The Migration Reports give two instances of Spotted Crakes taken at isolated lighthouses the Fastnet (Cork), 20th August. 1895, and the Tearaght (Kerry), 21st August 1887. These are sufficient to show that, like the Corn-Crake and the Water-Rail, this bird takes long flights from land in its migrations round the coasts; and as the instances at the Tearaght and Fastnet both took place in August, they strengthen the inference to be drawn from the monthly records that many Spotted Crakes arrive on our shores in that month: The western position of the stations named does not militate against this, for it has been seen that many migrating species continue their flight along the south coast until they reach the extreme west of Kerry.

In one case the Spotted Crane is proved to have bred; Colonel Irwin took a nest with nine eggs in a swamp near Castleplunket, co. Roscommon, about the year 1851; three of these lie has presented to the Dublin Museum, and retains a fourth. Watters' mention of a second nest is not corroborated by Colonel Irwin, but he says that at the period when he took the eggs these birds were not uncommon. This is confirmed by Mr. J. W. Warburton, who used to shoot near Elphin, co. Roscommon, between the middle of November and the middle of January up to 1862. This gentleman used not infrequently to meet with Spotted Crakes in sedgy parts of swamps where walking was dangerous; they were much more shy than the Water-Rail, and they never got up unless driven to do so by a retriever or almost trodden on. Being anxious to get a pair, he shot six before he could obtain satisfactory specimens, and he believes that three or four of these were killed in one day. Since then drainage and the invasion of their haunts appear to have driven away these birds. Thompson, on the authority of Chute, mentions that a young bird exhibiting some down had been taken in August in co. Kerry; and in the "Fauna of Cork" (1845) Harvey stated that Spotted Crakes had been met with not infrequently in that county for several years previously. Mr. H. D. M. Barton shot two in the same marsh in co. Louth in August; and a pair were shot at Glenmalyre, near Portarlinton, by Mr. T. Trench in August 1880. Two or three were seen and one shot on Upper Lough Erne about October 1889 by Mr. George Husbands, of Enniskillen. It there-fore seems probably that the nest found by Colonel Irwin was not an isolated case.

The following view of the Tearaght Island off the Kerry coast has been kindly supplied by Mr. G. E. H. Barrett-Hamilton, from a photograph taken by him.



THE LITTLE CRAKE.

Porzana parva (Scopoli).

Has once occurred in Ireland.

The only Irish-taken example of the Little Crake of which there is any record was shot by Mr. H. A. Hamilton at Balbriggan, on the, north coast of co. Dublin, on 11th March 1854, and was sent to Canon Tristram, in whose collection it was preserved (*Zool.*, p. 4298 [1854]). It proved to be a male, and measured 7 inches in length, and though very fat weighed only 1 oz. 6 drms.) Mr. J. H. Gurney, who had seen this specimen many times, stated that there was no doubt about its correct identification (*Zool.*, 1882, p. 151).

A second Little Crake was stated to have been obtained in Queen's County ("Fowler in Ireland," p. 252), but this proved to be a Spotted Crake.

BAILLON'S CRAKE.

Porzana bailloni (Vieillot).

Has twice been obtained in Ireland.

Thompson mentions the first known occurrence of Baillon's Crake in this country: "The specimen was procured in a bog at Clay Castle, near Youghal, on October 30th 1845." It fortunately fell into the hands of Samuel Moss, of that town, who preserved it, and who stated its length to be 7 inches, wings expanded 10½ inches, and its weight 1 oz. It remains in the possession of the Moss family, and was carefully examined by A. G. More (*Zool.*, 1882, p. 113). The bog where it was taken skirts the shore of a bay that has intercepted many rare birds in their westward flight, and these have either been obtained close to it, or along the valley of the Cork and Youghal Railway, which extends inland from Youghal Bay.

The second example was taken alive on Tramore Bay, further east on the same coast-line, on 6th April 1858, after a succession of heavy gales which drove numerous Puffins and other sea-birds on shore in a dying state. This specimen was sent to Dr. Burkitt, who preserved it, and presented it in 1892 to the Dublin Museum.

A small Spotted Crake, shot near Kanturk and preserved at Longueville, was formerly supposed to be a Baillon's Crake, but its species was ascertained by More, who examined it.

THE WATER-RAIL.

Rallus aquaticus, Linnæus.

Resident, breeding in every county.

The Water-Rail is fairly common in marshy ground all over Ireland, both in summer and winter, but is more seen in the latter season when the herbage dies down, especially when frosts drive this bird to running water for food. Few people realize how extensively it breeds in this country; it does so even in the marshes of Rathlin; but in Achill Mr. Sheridan only knows it as a winter-visitor. The Rev. G. Robinson thought it was increasing in North Armagh, near Lough Neagh, and there are districts in each of the provinces where it is said to be common, though from the nature of its haunts it is necessarily local.

The Migration Reports furnish us with numerous instances of the occurrence of the Water-Rail at the most remote and isolated light-stations, thus proving its migratory habits, and Mr. Barrington suggests that those birds which occur on the north and north-west coasts late in autumn may have come from Iceland. These autumn occurrences are not, however, by any means confined to the north of Ireland, but take place more or less on all parts of the coast; thus, in November 1887, Water-Rails were taken at lighthouses in Kerry, Wexford, Dublin, and Donegal.

The specimens in Mr. Barrington's collection, sent to him by light-keepers, came from the following counties:-

Kerry.....2	Dublin.2	Donegal.....7
Cork.....2	Down.....5	Mayo.....3
Wexford..14	Antrim.....2	Galway2

It may be seen from the above that this, like so many other birds, arrives most frequently on the Wexford coast. These occurrences took place in the following months :-

January.....1	May.....-	September....4
February...-	June.....-	October.....10

March.....1 July.....- November...17
 April.....2 August..- December.....3

The autumnal movement is here strongly marked, though, it must be remembered that birds are comparatively seldom seen when leaving the country.

It is evident that numbers of Water-Rails visit Ireland in winter, and it may be supposed that many of those which breed here pass the winter further south, though of this there is as yet no proof. No one would suppose from the slow and feeble flight of this bird that it could traverse hundreds of miles of sea, as it has been known to do.

Giraldus, when describing the birds characteristic of Ireland, wrote:- "Quails are found in considerable numbers; *ratula* also, with their hoarse cries, are innumerable." The translator was puzzled with the latter name, but the description answers well to the Water-Rail, whose outbursts of hoarse cries are startling in summer, especially when a shot is fired; they give the idea that the bird is hit and screaming with pain, though often uttered without assignable cause. Its cries, indeed, give us much the most frequent proof of the presence of this lurking species. When not excited, the bird produces a sound like continued grunting and squealing, each grunt being prolonged and terminating in a squealing sound, though the latter is not shrill like that of a pig.

The Coot and the Water-Rail will perch in hedges and low trees during frosts, and the latter can run with agility over the small twigs of osiers (Jameson). The nest, which can seldom be approached with dry feet, is buried among the sedge, sometimes on the flat margin of a lake where there is a belt of marsh-herbage, sometimes in a large tussock elevated above the swamp, but always well concealed until the overhanging sedge is removed. In the south laying often takes place in April, if not earlier (in one of the nests at South Kensington, taken in co. Waterford, the young were hatched on 17th April), but eggs are frequently found in May and sometimes in June, so that possibly two broods may be reared; late layings may, however, be the result of the destruction of the previous ones by rats which often occurs. The eggs, seven to nine in number, have a tendency to be pointed at the larger end, round which point the spots are more exclusively grouped than in eggs of the Corn-Crake. A set was taken at Cappagh in each of which the colouring matter is almost confined to one large blotch of deep red-brown. The young, when hatched, are covered with silky black down and have white beaks and pallid legs and feet, tinged above and at the joints with lead-colour.

Messrs. Williams & Son describe a Water-Rail which was white-except the long quill feathers, and had flesh-coloured legs and feet (*Zool.*, 1882, p. 74).

THE MOOR-HEN *Gallinula chloropus* (Linnaeus)

Resident, common and widespread.

The Moor-hen, known in Ireland as the Water-hen, breeds commonly in every county, as well as on the islands of Achill and Rathlin; while it not usually inhabits mountain lakes. Mr. Witherby found a pair on a little lake on the elevated island of Inishturk, west of Mayo, and another pair are resident on a piece of fresh water in the Aran Islands. This species does not appear to increase or diminish at any season, though in cold, exposed districts the birds that have bred in scattered localities gather to the rivers in winter.

So few are reported from lighthouses that it may be conclude the Moor-hen does not migrate to at all the same extent as the Water-Rail, nor has it been reported from the Tearaght or the Fastnet, like the latter and the Spotted Crake; still, a few have been recorded from various parts of the coast, chiefly in autumn.

There is one habit of this familiar bird which I have not seen described:- two males will fight in the water by striking each other with the feet like game-cocks; their wings are then thrown back and their hinder parts immersed; the vanquished bird finally escapes by diving. On the Cappagh lakes Moor-hens nest habitually in the rhododendrons over hanging the water, building year after year in the same spot; the spreading branch of a Scotch fir thus situated has held a nest for a great many seasons. Sometimes they build on a bare stump projecting out of the lake or among watercress or stems of the Equisetum in shallow water. A favourite site is the centre of a tussock of tall sedge, which radiates from the nest and screens it on every side; this forms an admirable cradle in the midst of an impassable quagmire. The nest, usually of sedge, is sometimes mainly composed of dried leaves, especially when in a rhododendron. Thompson mentions that the eggs were once laid in the deserted nest of a Magpie in a tree about twenty-five feet from the ground in the vicinity of water. Mr. Moffat has seen a Moor-hen sitting on seven eggs, one of which lay in the centre, while six were disposed round it, and he noticed on several occasions that when the bird left on his approach she drew an oak-leaf over them so as to screen the central egg completely and the others partially. I have never seen this done, but have always found the eggs uncovered, so that all Moor-hens do not practise it.

The eggs, seven to ten in number, are often laid at the beginning of April, and young may be seen by the middle of that month; but as clutches of eggs are found in June, a second brood is doubtless produced in the season.

THE COOT.

Fulica atra (Linnæus).

Resident, breeding in every county, sometimes in great numbers, but more local than the last species.

The Coot frequents quiet waters where there are large beds of flags or horse-tails, and may be found in such situations in every part of Ireland. A great many may be seen about the reed-beds near Ross Castle, Killarney, but not upon the open lake, and the same local tendency may be observed on Lough Derg, Lough Ree, and elsewhere. On some preserved waters, like Lough Iron, in Westmeath, there are vast numbers of Coots, and they are also numerous on the Shannon between Banagher and Athlone, on the inclosed portion of Wexford Harbour, and Lough Swilly in Donegal, on all of which they breed. Mr. Gage first observed the Coot on Rathlin Island in 1859, and by 1861 he stated that it had become quite common. It does not appear to leave its breeding-quarters in the south, except when the lakes are frozen, but in the north, and even in Wicklow, this is otherwise.

The thousands of this species which resort to the inland water of Lough Swilly in winter, and even congregate upon the open portion, are far in excess of the birds that breed in the district.

The Coot is also a winter-visitor to Achill, and has been shot on the Aran Islands. Mr. Barrington has five specimens from light-station, of the four provinces, taken in September, October and November, showing that a certain number of Coots take long flights round the coast in the late autumn.

This bird, when alarmed, will sometimes submerge itself, showing only the back and frontal plate above water, and can remain thus for several minutes; it will also endeavour to escape from the Marsh-Harrier by diving, but the latter waits on until the Coot is exhausted by repeated dives.

A pair will frighten away a Hooded Crow from their eggs by angry cries and gestures. The eggs are laid in co. Waterford at the beginning of April, but on the Shannon lakes in May or June. On Lough Ree a rise in the water-level had flooded the Coots' nests when I visited the place on 6th June 1892, and I found eggs in one case the body of a young Coot-imbedded in fresh nesting material used to raise the nests; on this eggs were again laid. I have found as many as eleven eggs in a nest, but only once.

A Coot with almost half the plumage white was obtained near Enniskillen (Williams, in *Irish Nat*, 1896, p. 56), and a pied specimen in the Dublin Museum is from co. Clare.

Order GRALLÆ.

Sub-order GRUES

Family GRUIDÆ.

THE CRANE. *Grus communis*, Bechstein,

Rare and irregular visitor, having been obtained in nine or ten instances, within the century,

It has been believed that the Crane was common in Ireland in the twelfth century, from the statement by Giraldus de Barri (Cambrensis) that a hundred of these birds (*grues*) might then be seen in a flock, and his chapter on the Crane in the British Museum MS, is illustrated with an unmistakable coloured figure; Higden also, in the fourteenth century, stated that Ireland abounded in Eagles, Cranes, Peacocks (Capercaillies?), Quails, Hawkes, and Falcons. We cannot, however, be sure that these ancient writers did not confound the Heron with the Crane, as is done at the present day; "Crane" being the name by which the Heron is generally known in Ireland.

Smith, who describes the peculiar breast-bone, mentions in his History of Waterford (1746) as well as in that of Cork (1750), that a few Cranes had been seen in these counties "during the great frost of 1739, but not since or before in any person's memory," One of those alluded to was taken in Cork Harbour (Harvey, Notes), Dr. Patrick Brown, in his Catalogue of the Birds of Ireland, enumerated "*Ardea grus*, the Crane" and "*Ardea cinerea*, the Heron." His death occurred in 1790, If the instance, given to Thompson were correctly reported, this species has been known to occur during the nineteenth century in six different years, and ten specimens, have

been obtained, which were scattered over the province, of Munster, Connaught, and Ulster, and occurred at different seasons. On one occasion, in November 1851, a small flock or flocks visited the coast district, of Kerry and Cork, in both of which counties individuals were shot. In 1896 a Crane was shot in Donegal in June, and another in Tipperary in September. The stomach, of some of the above contained roots, of grasses, pieces of aquatic plants, and shells of water-snails.

Kerry. - Thompson was informed by Chute, in 1846, that a Crane had been shot on Tralee Bay about 1826 (Thompson, II., p. 132). In the Proceedings of the Dublin Natural History Society (18th December 1851) a detailed account is given of Cranes which were met with in Kerry and Cork in October and November 1851; two adult specimens of these are in the Dublin Museum; two had been seen about the end of October near Derrynane Bay, Kerry, and on the 5th November one of them, the first of the above, was shot. About a fortnight afterwards five were seen on Ballinskelligs Bay, in the same district, and a male was obtained, which is probably the second of the adult pair now in the Dublin Museum; its length was 5 ft. 6 in., its wings measured 7 ft. from tip to tip, and its weight was 12 lbs.

Cork. - In the same month, November 1851, three or four Cranes were seen near Kinsale, and three were obtained; one of them, which is now in Queen's College Museum, Cork, was shot on Annah Bog by Commander Douglas on 17th November (Harvey, Notes). Subsequently five were met with by Mr. Knolles of Oatlands, east of Kinsale, where they

were feeding on upland stubbles, and one of them was killed; it weighed 10 lbs. 8 ozs.

Tipperary. - An adult male, the most recent specimen recorded, was shot at Sheskin, near Thurles, about 3rd September 1896, and became the property of Mr. Carrigan, of Thurles (*Irish Nat.*, 1896, p. 51).

Galway. - In 1884 the Museum of the Royal Dublin Society contained a Crane, which was stated by Glennon to have been shot in co. Galway about 1809 (Thompson, II., p. 182).

Mayo. - Two were observed on 1st January 1884, in a stubble field near Lough Mask, by Mr. John C. Hearne, who shot one, an immature bird, now in the Dublin Museum. The other was afterwards shot, but was not preserved.

Down. - Mr. R. Lloyd Patterson announced that a male with fine plumes was shot on 10th May 1882 near Killyleagh (Field, 27th May 1882); it now belongs to Mr. Robert Patterson.

Donegal. - A male bird, whose plumes were very slightly developed, was shot at Inch Slobbs by Mr. J. McConnell on 23rd June 1896 (Campbell, in *Irish Nat.*, 1896, p. 214).

Sub-order OTIDES.

Family OTIDIDÆ.

THE LITTLE BUSTARD. *Otis tetrax*, Linnæus.

Has six times been obtained.

In rare and scattered instances the Little Bustard has occurred, singly or in pairs, in different parts of Ireland, five times during the colder months of the year, and once in August. One specimen was obtained in Kerry, two on the eastern shores of Cork (at an interval of twenty-three years), one in Wicklow, one in Longford, and one in the extreme north-west of Mayo.

Kerry - One (an adult female?) was shot on 30th December 1892 near Ballyduff, Ballybunion, and was examined by A. G. More.

Cork. - A full-grown bird, probably a male of the year, was killed on the shore of Ballycottin Bay on 24th December 1860 during frost, and presented by Lord Clermont to the Belfast Museum, but is not now in the collection there (*Zool.*, p. 7385 [1861]); another Little Bustard was shot near Ballymacoda, on the south of Youghal Bay, on 14th November 1883, and was deposited in the Dublin Museum by Mr. H. F. Allin.

Wicklow. - Two were seen and one shot on the bog of Killough, about five miles from the sea, on 23rd August 1833, when in company with Golden Plover. The survivor remained for some time about the locality (Thompson, II., p. 77).

Longford. - A female was sent to the Dublin market in a package of game from co. Longford and recognized on 13th February 1883 by Mr. Lawson Powell, who has preserved it (*Field*, 9th March 1883).

Mayo. - Two were seen and one shot in a bog near Belmullet in December 1887, and the specimen then obtained is in the Dublin Museum.

An adult male in Trinity College Museum bears the "Yarrell" label, but it cannot be connected with any of the above records.

N.B.-There has been no authenticated occurrence of the Great Bustard in Ireland, although Smith enumerates it among the Birds of Cork; but as he has included the Hobby and the Black Grouse among these without particulars, the statements may be disregarded ("Antient and Present State of Cork," II. p. 329, 1750).

Order LIMICOLÆ.

Family CEDICNEMIDÆ.

THE STONE-CURLEW. *Cedicnemus scolopax* (S. G. Gmelin).

Rare casual visitor, chiefly in winter, but never in summer.

The Stone-Curlew has been obtained in Ireland in ten cases. Eight of these occurred along the eastern sea-board from Waterford to Antrim, and but one has been recorded from the west (co. Clare), if we exclude the birds reported to have been seen in Kerry (Thompson, II, p. 82); the locality of the tenth example was not given further than that it was from Ireland.

The distribution of nine birds was as follows:- Clare (1), Waterford (1), Wexford (1), Dublin (5), Antrim (1); these facts plainly show that the species is a mere straggler on migration. The season of the year too when it has chiefly occurred in Ireland indicates the abnormal character of these visits (as in the case of those Stone-Curlews which have wintered in Cornwall). One bird was said by Watters to have been shot in "autumn"; there were two instances in December, two in January, and two in March. Dr. Kinahan, in his very instructive paper, enumerated the Stone-Curlew among the European summer migrants which have visited Ireland in winter (Proc. Dublin N.H. Soc., 31st January 1860, and *Zool.*, p. 6957 [1860]). If the birds reported by Parker to have been seen by him in the west of Kerry in August 1842 (Thompson, II, p. 82) were Stone-Curlews, it would merely show that they had wandered thus far along the south coast after the breeding-season was over.

Waterford. - A specimen was obtained at Brownstown, east of Tramore Bay, about 1st March 1840 (Thompson, II., p. 82).

Dublin instance is cited by Kinahan for 1853 (Proc. Dublin N. H. Soc., 31st January 1860); one was shot near Portmarnock on 4th January 1868 (Blake Knox, in *Zool.*, s. s., p. 1134 [1868]); another, now in the Dublin Museum, was obtained on the North Bull, Dublin Bay, on 3rd December 1884 (More's "List of Irish Birds").

Clare. - A Stone-Curlew which passed into Watters' collection was said to have been shot in co. Clare in the autumn of 1844 (Watters, p. 172). It may be remarked; however, that Glennon, the taxidermist employed by Watters, assigned the occurrence of several rare birds to co. Clare, but that since his time that county has proved especially poor in such records.

Antrim. - The only occurrence in Ulster took place on the Northern Counties Railway near Belfast, when a Stone-Curlew that had flown against a telegraph wire was captured. It is now in the Belfast Museum. Besides the above instances there is a record of "Thick-Kneed Plover," presented by Edward Elliott, among the Donations to the Dublin Natural

Wexford. - Another was shot in co. Wexford about the beginning of December 1844 (Poole, in *Zool.*, p. 876 [1845]); on the same page is a notice of another in Cornwall in December 1844.

History Society (1839-40), and the list dated April 1845 of Irish Animals in the Museum of the above Society contains "*Cedicnemus cripitans*," doubtless the same specimen, of which no data appear.

Dublin. - The first recorded was shot near Clontarf, Dublin Bay, on 27th January 1829 (Thompson, II, p. 82) ; another was shot on Clontarf Island in 1849 (Kinahan, in Proc. Dublin Univ. *Zool. Assocn.*, 25th November 1854); a third

Family GLAREOLIDÆ.

THE PRATINCOLE. *Glareola pratincola* (Linnæus).

Is believed to have been once obtained in co. Cork previous to 1814.

Thompson and Harvey included the Pratincole among Irish birds on the authority of a description given to the latter by the Rev. Joseph Stopford. He informed Harvey that he shot a bird at Castlefreke a few years before 1844 (the year in which the "Fauna and Flora of Cork" was written), and the minute description that he gave left no doubt as to its having been a Pratincole, though unfortunately it was not preserved.

The co. Cork is a part of Ireland where several rare stragglers from southern countries have been obtained, e.g., the Rufous Warbler, Squacco Heron and Little Bustard. With regard to this species, Mr. Howard Saunders remarks that as it appears to have reached British shores by traversing the western half of France, its identification in the above instance was probably correct ("Manual of Brit. Birds," 1899, p. 531).

Family CHARADRIIDÆ.

THE DOTTEREL. *Endromias morinellus* (Linnæus).

Very rare visitor, chiefly on the autumn migration.

There are twelve records of the Dotterel in Ireland, eleven of which relate to the following counties of Munster and Ulster only, the locality of the twelfth instance being unknown:- Cork (1 instance), Waterford (4), Tipperary (1), Down (2), Antrim (1), Londonderry (1), Donegal (1). The Waterford occurrences all took place within a few miles of Clonmel, the only hills or mountains near that town being in co. Waterford. Nine of the instances took place before 1854.

There is but one notice of the bird in spring (April), when a flock of about twenty were met with, one in June, three in August, three in September, and one each in October, November and January.

Cork. - A female was obtained in a fallow field a few miles to the west of Cork city about the end of September 1844 (Harvey's "Fauna and Flora of Cork," p. iv. Preface).

Waterford. - A male, at least a year old, but in moult, was shot on the mountains near Clonmel on 24th August 1840 (Thompson, n., p. 94). An adult and an immature bird were seen by Davis in a shop in Clonmel on 18th August 1841; they were probably shot on the same mountains (Ibid.). Davis again received a Dotterel on 30th September 1853, shot on the hills near Clonmel (Dublin Univ. Zool. Assn., 4th March 1854). An adult female, showing the bare hatching spots, and an immature bird of the year were shot on the Waterford hills in September 1886 by Mr. A. St. George, of Clonmel, and are now in the Dublin Museum.

Tipperary. - Another, in company with Golden Plover, was shot on the summit of Slievenaman about 24th June 1835; and obtained by Davis (Thompson II., p. 94).

Down. - The earliest occurrence of the Dotterel known in Ireland was when three were seen and one was shot on a high hill near Finnebrogue a few years before 1834 and, as it was believed, in

November (Ibid., p.93). A flock of about twenty, which appeared tame, were met with in a ploughed field near Ballywalter in the Ards early in April 1848; three were killed at one shot, and two of them preserved and examined by Thompson. He remarked that this, the only known occurrence in spring, took place at the most eastern part of the Irish coast.

Antrim. - Four were said to have been seen and one procured in a field bordering Belfast Lough about the middle of August 1841 (Thompson, II, p.94).

Londonderry. - Mr. Sheals informs me he received for preservation a Dotterel shot near Coleraine, in October 1878, the property of Mr. J. H. Houston.

Donegal. - A specimen, shot on the top of one of the highest mountains in Donegal, while it was in company with some Golden Plover, was exhibited by T. W. Warren before the Dublin University Zoological Association previous to 4th March 1854, when Ball alluded to the occurrence. Besides the above, Mr. E. Williams saw a Dotterel in a Dublin poulterer's shop in January 1889, which had been sent, with other game, from some part of Ireland.

THE RINGED PLOVER.

Ægialitis hiaticola (Linnæus).

Resident and common on all low-lying coasts, where it becomes more numerous in winter by immigration. Summer visitor to the inland lakes, where it breeds as well as on the coasts.

The Ringed Plover is a familiar bird on our sea-shores at all seasons and breeds there in every maritime county as well as on many of the islands, *e.g.*, on the Copelands, Inishtrahull, Rathlin O'Birne and Eagle Island East. It comes to the inland lakes, often by the beginning of February, as observed by Mr. Parker, on Lough Derg; and he has found the full set of four eggs on the 7th of April, though I have met with uncompleted clutches there on 30th May. This species breeds on the larger lakes from Lough Derg through Leinster, Oonnaught and Ulster, and on banks in marshes in Queen's co., as at Granston, where its nest, lined with little pebbles, has been observed. Regarding the accession of winter immigrants Thompson says:- "All the Ringed Plover produced in Ireland form, I conceive, but a small proportion of those which frequent our shores for three-fourths of the year, and as numerous in winter as at any other season." He found some of the flocks of winter birds remained in Belfast Bay until late in May even the beginning of June, long after the resident birds had commenced to breed. At other times it is difficult to distinguish the strangers, but we find Ringed Plover numerous on our shores in autumn, winter and spring, both in flocks by themselves and also intermixed with Dunlins, Turnstones, Redshanks and Sanderlings; in hard frosts they frequent the mouths of rivers and sometimes feed among the seaweed on rocks. On the coast the first eggs are laid in April and a second clutch in June, while early in the latter month, before the second eggs are laid, the special haunts of this species are often alive with the first broods. Fresh eggs may, however, be found in May, and the birds which breed on inland waters seem as a rule to be later breeders than those on sea-shores.

The nesting-hollow is scratched in various situations, most frequently in bare sandy or gravelly soil, sometimes in gravelly shingle on the top of cliffs, sometimes in bare earth at a considerable distance from the shore; at other times, though exceptionally, in the dry wrack or *Zostera* cast up by the sea above high-water mark. I have found the eggs laid on the top of a rock on Deer Island off Roundstone, and under a Willow-bush on an island in Lough Sheelin. Mr. Campbell says that at Inch, Lough Swilly, many birds lay their eggs upon the grass, and a nest was found in the centre of low brambles which formed a canopy over the eggs. A Ringed Plover has been known to lay right in the course on golf-links, where every ball whizzed over her head; but so general was the interest felt in her eggs that they were not disturbed, and she hatched them out (Pentland, in *Zool.*, 1889, p. 182).

This bird loves to line the hollow in which it lays with bits of white shells or with white pebbles, and in other cases it uses for this purpose pellets of dried rabbits' dung, as the Oyster-catcher often does.

In the remarks of Garrett, quoted by Thompson, it is said that before the young are hatched the female alone is to be seen near the eggs, and that she never utters a cry at that time, but, like other *Limicola*, runs quietly away from the eggs before she takes wing; when, however, the young are out, both the old birds are in constant attendance, crying incessantly if alarmed for the safety of their offspring. These I have found to run, before I came near, when they squatted among the pebbles, to which they bear an extraordinary resemblance while in down.

Thompson describes a Ringed Plover which was white except in those portions of its plumage which are normally black, and these were of a pale yellowish white.

THE KENTISH PLOVER.

Ægialitis cantiana (Latham).

Extremely rare visitor to the east coast on the autumn migration.

The Kentish Plover has been obtained in Ireland in four or more instances, of which the particulars now available are imperfect; and we have no record more recent than 1852. In considering this fact, however, it must be borne in mind that the smaller *Limicola* receive exceedingly little attention in Ireland, and that they are very rarely sent to a taxidermist for preservation. The localities where the above instances occurred were all, as far as is known, on the Dublin coast, and the season in three cases varied from August to winter. The only specimen known to exist is a male from the Montgomery collection, and is now in the Science and Art Museum, Dublin; it was obtained on the North Bull, Dublin Bay.

Eight are said to have been seen and two shot in Dublin Bay in the autumn of 1846, and Montgomery, who saw these in the hands of the shooter, obtained one of them (Thompson, II, p. 105). He subsequently exhibited this or another before the Dublin Natural History Society in May 1852, and he then remarked that he had procured the bird after a violent gale from the east. An adult male was killed with a stone on the shore near the Clontarf Railway Station in August 1851, by a person who noticed its tameness; it passed into the collection of Watters, which has perished by fire (Watters, p.179).

Several pairs are said to have been seen on a small island near Clontarf, during the winter

of 1852, by Mr. J. H. Lamprey, and some of these were obtained and preserved (Ibid.).

In May 1852 Montgomery, when exhibiting his own specimen, mentioned another recently procured for the Trinity College Museum by Ball, and which was killed at Baldoyle, north of Dublin Bay (Proc. Dublin N.H. Sac., May 1852, p. 89).

Other supposed examples mentioned by Thompson were not seen by him and may be excluded, though he seemed satisfied from the description of the persons who shot them that they were Kentish Plovers. These occurred on Belfast Lough in August 1848.

THE GOLDEN PLOVER.

Charadrius plumialis (Linnæus.)

Resident, breeding on mountains in many districts and on bogs in Connaught. Large numbers arrive in autumn and winter, when the species becomes widespread and roams greatly.

The breeding-haunts of the Golden Plover are on lonely mountain-tops in the four provinces, and are to be found in Kerry, Cork, Waterford (?), Tipperary, Wicklow, Dublin, Queen's Co., King's Co. (?), Galway, Mayo, Sligo, Leitrim, Cavan, Fermanagh, Donegal, Down, and Antrim. In Connemara and Mayo the lower slopes of the mountains and the great bogs around their base and near the coasts are frequented in the breeding-season, but in the more cultivated and populous counties, like Dublin and Wicklow, one must at that time seek for the Golden Plover on the desolate moors that cap the highest mountains. It does not appear to breed on the flat bogs of the midland counties.

In August the parents and the young reared in the country begin to flock, and Thompson has seen forty together on the 12th on heathy uplands, while others were shot on Belfast Lough before the end of that month. In September the migratory flocks begin to arrive, and are noticed on the coasts of Leinster and Ulster, but the chief immigration takes place early in October, when large numbers may be seen flying into the country from the east in V-shaped bands at a great height. During October the flocks make their appearance in their upland winter haunts throughout the country as well as on the coasts. They chiefly betake themselves to the latter in frosts, especially in the south, but on favourite bays and estuaries assemblages of this species are common in winter. Thus this bird is an annual visitor to Dublin Bay; on Lough Swilly it used to be extremely plentiful, though now less so, appearing of late years disposed to limit its stay there to a short time in the end of autumn; large "stands" rest by day on the extensive sands inside Bartragh Island on Killala Bay, and the numerous inlets of Mayo and Connemara are favourite winter haunts. To the mud-flats of Tralee Bay and to the other southern bays, including that of Wexford, Golden Plover resort less regularly, but frequent them in hard frosts. In severe seasons they make their appearance on the lowland pastures, where they may be found in bleak, wet weather as well as in frost; but when the latter becomes intense, or a fall of snow comes on, the flocks have been seen along the south coast leaving Ireland at a great height in a southerly or south-westerly direction. An instance of the latter kind was observed at Dursey Island, where, on 8th December 1882, flocks were seen all day going SW., while at Cork and Wexford stations they were seen during the following week flying south (Migration Reports). At such times Golden Plover often partake in the general movement of other birds in quest of a more tolerable climate. Moreover, the light-keepers' records show from year to year how addicted this species is to wandering round the coasts, alighting at times on the remotest rocks, such as Black Rock (Mayo) Rathlin O'Birne and Inishtrahull; and numbers pass the winter on Achill, Aranmore and Rathlin Islands. The Golden Plover is generally more plentiful in Ireland in late autumn and early winter, and if the season be mild it remains, but otherwise it becomes scarce after the middle of December, not returning until February or later. Flocks are commonly seen on the mountains in March and April ready to depart, and some have been known to linger until late in May, by which time our resident birds have long settled at their breeding-haunts.

The black breast is assumed in March and April, sometimes in the north of Ireland while snow is still on the ground.

On the night of 2nd May, 1891, the Rev. Allan Ellison listened for hours to the cries of myriads of *Limicola*, chiefly Golden Plover, which passed over Dublin continuously towards the north-east (*Zool.*, 1891, p.429), and in the beginning of May 1897 a similar event was noticed by Mr. Campbell at Londonderry, the birds of many species apparently passing in many thousands in the same north-easterly direction (*Irish Nat.*, 1897, p. 222).

In the Wicklow mountains the Golden Plover does not betake itself to its elevated breeding-haunts until the middle of May, in which month the eggs are also laid in Mayo.

Golden Plover have been observed to frequent the mud-flats of Tralee Bay during the early hours of the day and then to fly to the low hills about noon. On the coast of Louth Montgomery observed great flocks frequenting Port Bay, where there are patches of shingle abounding in small molluscs, while on parts of the coast where shingle is absent not a Plover is to be seen.

In the breeding-season the presence of these birds is indicated at a long distance by the plaintive cry or whistle of the male as he stands on a tussock of the moor; when one approaches he flies on to a similar spot and repeats his cry; the female at his warning quits her eggs and steals away on foot to some distance, and then she joins in the same performance. When the birds are thus watching an intruder he may wait for hours without being able to trace them to the nest.

THE LESSER GOLDEN PLOVER. *Charadrius dominicus*,
P. L. S. Müller

Has once been obtained in September at Belmullet.

In the Zoologist (1894, p. 428): Mr. E. Williams wrote as follows;- "On September 13th (1894) I obtained a specimen of the American Golden Plover amongst a lot of Golden Plover, which had been sent direct from Belmullet, co. Mayo. The bird is an adult, retaining a good portion of the black breast of the summer plumage, and differs from the European species in being longer in the tarsus, and having the axillary feathers smoke-grey instead of white, and a broad band of white over the eye. This species has not hitherto been detected in Ireland."

The above specimen is in the collection of Mr. Barrington.

THE GREY PLOVER *Squatarola Helvetica* (Linnæus)

Autumn and winter-visitor to the coasts, rare inland; a few remaining on until summer,

The Grey Plover occurs in small parties round the coasts rather irregularly and not at all numerous, and is an uncommon bird in the south of Ireland. To Dublin Bay and Belfast Lough it is an annual visitor, arriving in the latter half of September and leaving before spring. On the inlets of Londonderry and Donegal it is considered uncommon, but is more frequent on the estuary of the Moy and Killala Bay, where, as Mr. Warren says, "it is met with in limited numbers, one or two being generally seen at a time; but towards the beginning of April these birds commence to collect together preparatory to leaving for their summer haunts." He adds: "On the 29th of March 1877 I saw a flock of nearly thirty on the sands near Bartragh, and shortly after saw eighteen flying past. They frequently remain as late as June before leaving for their breeding quarters. On the 29th June 1860 I saw thirteen Grey Plovers, and only two showed the black breasts of summer. On their return in autumn a good many are seen retaining the black breasts, but very soon lose that colour.

"I never saw Grey Plovers so abundant as during the migratory season of 1887; late in September and early in October they were to be seen everywhere about the shores of the estuary, in all the little bays and in places where I never saw one before; from their great tameness they were evidently young birds, for they took no notice of my punt, often allowing me to get within fifteen and twenty yards. This great invasion continued up to November, when their numbers lessened, and by the end of the month only the usual stock of Grey Plovers were to be seen about the shores and sands."

To Achill and Blacksod Bay, also, this bird is a winter-visitor, but to the bays of Galway, Kerry, Cork and Waterford it comes less regularly, though at Wexford it has been at times plentiful. Several informants have reported it from Leitrim, down the Shannon Valley as far as the counties of Tipperary and Galway, and owing to the Golden Plover being given the name of the "Grey" in Ireland some confusion may have arisen, but I have been sent a specimen of the Grey Plover by the Ron. R. E. Dillon, which was shot near Clonbrock early

in 1893 from among a flock that visited that neighbourhood. This is the only instance in which I know the species to have been obtained inland, but as many sea-birds have been known to traverse the valley of the Shannon on migration the occurrence of the Grey Plover in its vicinity is the less surprising.

This bird is met with more frequently from the time of its arrival until the end of the year than it is afterwards, though often recorded in January and February. Afterwards it becomes rare on the eastern coasts, and does not seem to visit them on the spring migration; no gatherings having been noticed in April on Dublin or Belfast Bays, like those mentioned in the north-west by Mr. Warren. As stated above by him, Grey Plovers, chiefly immature birds, frequently linger on Killala Bay until June; individuals have also been obtained at Tralee in May, and on Dublin and Belfast Bays in nuptial dress in June and July (Thompson, Watters), while Mr. E. Williams has noticed birds in that state of plumage on 28th August and 2nd September. Summer occurrences must, however, be rare, except in Mr. Warren's district, as no other observer appears to have noticed them repeatedly.

Thompson states that he used to find Grey Plovers feeding in small numbers about the plashy spots in the banks of *Zostera* at low water, but he observed that the advancing tide did not drive them inland like the Golden Plovers and Lapwings, for they would remain on some dry spot close to the water, or on floating sea-weed, until the tide ebbed. He also believed that Grey Plovers fed at night, from the fact that their protuberant eyes enabled them at that time to detect the approach of the shooter before he could distinguish them.

THE SOCIABLE PLOVER. *Vanellus gregarius* (Pallas)

Has once been obtained, in August.

On the 4th August 1899 Mr. E. Williams received for preservation a bird which he identified as the Sociable Plover (Irish Nat., 1899, p. 233). It had been shot on 1st August, near Navan, co. Meath, by Mr. Chandler, of Robertstown, whose ploughman had perceived it as he was grubbing turnip-drills. It was examined in the flesh by Dr. Scharff, and was exhibited by Mr. Howard Saunders before the British Ornithologists' Club on 22nd November 1899. It is an immature bird, and a photograph of it appears in the Irish Naturalist (1899, p. 233), accompanying a paper upon it by Mr. E. Williams, in which he says: "As far as I can make out by comparison the bird is a female, and I think in the second year's plumage." The following is his full description: "Top of head very dark brown, dappled with light buff; a broad light-coloured band extends right over the eye from the bill to the back of the head. Back ash-grey with a number of new feathers of a dark brown tint, with a rufous edge coming out all over, which I take to be the winter plumage. Lower part of breast blackish, with a band of chestnut not very clearly defined, extending right across behind the legs. Vent and lower tail-coverts white. Tail consisting of twelve feathers, two outer ones white, the rest white with a band of black near the end, widest in the middle ones and narrowing as it approaches the sides of the tail. Primaries black, secondaries pure white, tertiaries and wing-coverts ash-grey, with dark feathers coming out same as back. Tibiotarsus 6.5cm, tarso-metatarsus 6.9cm, hallux 6mm, bill, 2.9 cm." These measurements were carefully made by Dr. C. J. Patten.

THE LAPWING. *Vanellus vulgaris*, Bechstein.

Resident and locally numerous, breeding in every county. A large immigration takes place in winter.

Throughout Ireland the Lapwing breeds on the flat moors and marshy lands or islands of inland lakes, and by the coast on sandy tracts, as well as on marine islands, such as the Saltees, Lambay, the Copelands and Rathlin. It appears to be more numerous in the nesting-season in northern Leinster, Connaught and Ulster than in the rest of Ireland, but wherever it finds a safe and suitable haunt, as on Lord Castletown's marshes in Queen's Co., it breeds in numbers. It is rare on the mountain bogs, as it is said to be in western Mayo, near Belmullet.

In the north, flocks of the home-bred birds may occasionally be seen as early as the end of July or the beginning of August, visiting Belfast Bay or the shores of Lough Neagh. Lapwings do not, however, become common in flocks before September, while it is in October and later that the cross-channel migration is observed; this is renewed at any period of the winter when severe cold sets in. As far west as Kinsale the arrival of flocks coming from the south-east has been observed to continue all day, and at different points along that

south coast and the coasts of Leinster bodies of Lapwings have been seen making for the Irish land on the approach of the cold weather; this is most frequently observed at the co. Wexford light-stations. In snowstorms and hard frosts Lapwings may be noticed moving down the east and south-east coasts towards the extreme south-west of Cork and Kerry and crossing Tralee Bay in the like direction, while a few birds have reached the Skelligs and Blaskets. On the coasts of Down and Antrim, however, the movement on such occasions seems to be north-westward towards Donegal, where the western climate is most speedily reached. In March and April, and even in May, Lapwings have been seen going north along the Leinster coast and crossing from Ulster towards Scotland (Migration Reports).

Mr. Warren attributes to immigration the great increase in the flocks of Lapwings which he observes on the sands of the Moy Estuary from September onwards, and which on certain occasions, when roused by a Peregrine, have appeared like swarms of insects. If the mild season lasts these continue on up to Christmas, but after that only a few small flocks frequent the sands until the first severe frost drives them off; then about the middle of February or in March the home-breeding birds, as he considers them to be, return to the estuary. Mr. Warren also remarks that few, if any, come down to the tidal flats by day while the nights are dark, keeping altogether to their inland feeding-grounds, as though their only chances of obtaining food at that time were during the daylight. Mr. J. E. Palmer has seen immense flocks of this species during autumn, winter and early spring in Roscommon and Mayo, "probably hundreds of thousands of birds in the course of a day."

Lapwings are exceedingly sensitive to any bad wintry weather, of which their mewing cry is an announcement as they visit the lowlands. In severe frost and snow they may be seen feeding with members of the Thrush family, and then become so tame from starvation as to be found about farm lands and occasionally close to houses, while the remorseless Rooks will kill and devour them as well as other birds. Dr. E. Blake Knox has remarked that these birds occasionally lose their toes from frost-bite. The evolutions of Lapwings, sometimes performed at a great height, are described in the "Fowler in Ireland" (p. 176), and by Thompson (II, p. 114), who notices their power of "drumming" in the breeding season as well as the graceful figures performed by a large winter flock. They will rise and sink as if about to alight but wanting the resolution to do so. He also remarks their habit of retiring inland at high-water and returning with the ebbing of the tide like some sea-birds. Another trait of the Lapwing and Golden Plover is that if a shot be fired when they are flying overhead they will swoop down almost to the ground as if they were shot, though quite uninjured.

I have seen these birds resort in great numbers to flooded fields where the earth-worms had been drowned out.

Plover-netting is carried on largely in parts of Ireland, and Sir R. Payne-Gallwey has known one man to take twenty pounds worth in a week. This practice has much reduced the numbers of Golden Plover and of Lapwings in some localities, but the taking of Plovers' eggs for the market is not common, small delicacies being little sought for in this country.

The Rev. A. Ellison has seen the eggs in Wicklow and Down by the end of March, but April is the month when they are usually laid in the south. The first plumage is brownish on the back, and when a fledgeling squats flat on a pasture-field it looks exceedingly like a cow-dung, and thus often escapes observation. The parents are very daring in driving away predaceous birds, and I have seen both the Heron and the Hooded Crow chased by Lapwings in defence of their young.

A dark mouse-coloured specimen is described by Thompson.

THE TURNSTONE. *Streptilas interpres* (Linnæus).

Common visitor to all parts of the Irish coast in autumn, winter, and spring. Small flocks have often been seen in June.

Of all our winter-visitants the Turnstone remains the longest, July being the only month in which it is seldom seen, though Thompson knew of a couple killed on the 25th, and Mr. Warren saw eight on Ardboline Island, co. Sligo, on the 8th of that month. In August it makes its appearance more or less commonly all round Ireland, usually during the latter half, but sometimes early in the month, the young birds being numerous and tame; and from that time until October it is most abundant. Though Thompson tells us that it winters on Strangford Lough he found it scarcer after the autumn was past, and the diminution in numbers on Dublin Bay is noticed in October by Mr. H. Blake Knox and Dr. Patten. I have, however, observed a great increase on Dungarvan Bay in the middle of November, and these birds are said to be numerous in December on Dunmanus Bay, co. Cork. Turnstones may be found, especially in the south, all through winter, an increase

being observed in late spring on Dublin Bay; while on the Sligo and Donegal coast considerable flocks frequent the islands in May and the beginning of June. These are chiefly composed of immature birds of the preceding year, but also contain adults in full summer plumage, conspicuous in their black, white, and brilliant chestnut colouring. Besides the counties named, I have seen small flocks of Turnstones early in June on the Connemara rocks, the Aran Islands, and the Keeraghs off Wexford, the 15th of that month being the latest date when I observed these birds, on which occasion six were met with on a rock near Inishark. I have seen two separate pairs on a low island off Donegal on 4th June, but these did not evince the anxiety of breeding birds. T. F. Neligan informed Thompson that a bird had been shot by him in Kerry at the end of Mayor beginning of June 1837, which contained an egg ready for exclusion; but it is not to be concluded that the Turnstone breeds in Ireland.

From the numbers in immature plumage that are to be seen in company in May and June it is evident that this species does not breed when one year old, and from the mixture of a few adults then found among the dull-coloured younger birds it would seem that the family groups continued together throughout the winter.

Turnstones are much more often met with in small numbers than in large flocks; they frequent the shingly beaches, but specially delight in remote rocky islands, such as Inishtrahull, which is a favourite resort all through winter. They are very common on the Irish coasts, especially in the west. A small party of them will resort to a favourite roosting-place in the rocks, which becomes whitened by their droppings, as we found on the Skerds off Roundstone in June; on that part of the coast Mr. Howard Saunders noticed surprising numbers in September 1878, in company with Oyster-catchers and Redshanks, so that the bright colours of the legs of these three species quite enlivened the grey hue of the rocks. A Turnstone has been captured on 24th August seven hundred miles west of Ireland (G. D. in *Field*, 8th September 1877).

THE OYSTER-CATCHER. *Hamatopus ostralegus*, Linnæus.

Resident and common, breeding on the islands, especially on those of the west and north coasts.

The Oyster-catcher is a common bird of the rocks and sands all round Ireland. Its breeding-resorts on the south-east and east coasts are few, being confined to the islands of Wexford and Dublin; but in western Cork and along the entire west and north coast, round to the Copeland Islands in co. Down, it is exceedingly numerous, being found commonly nesting on innumerable rocky islands, even those so remote as the Skelligs, the Blaskets, Slyne Head, Eagle Island, Rathlin O'Birne, and Inishtrahull. It is found in flocks and in small parties every month in the year, but rarely in July, the flocks increasing in size in autumn, and during winter and early spring large assemblages are met with on many parts of the coast, sometimes a hundred or more together.

In reviewing the Migration Reports one is struck with the greater frequency of the Oyster-catcher on the western and north coasts and its general absence from the records made at lightships, for though no bird seems to be better known to light-keepers, who call it "Sea Pic," it does not appear that it uses the Wexford migration route. Though the Copeland Islands are much frequented, so are the Aran Islands and others which lie outside the area of cross-Channel movements. The winter flocks of Oyster-catchers that frequent our eastern and southern bays and shores may to some extent be accounted for by the great numbers bred along the west and north of Ireland; but Professor Leebody thinks those seen in winter on Lough Swilly vastly outnumber the birds bred on the coast, and there is probably an immigration during the cold season from the west of Scotland.

A southward movement certainly takes place in autumn, for large flocks may then be found on the bays of Waterford, a county where none are known to breed. The Oyster-catcher does not, however, leave the most northern part of the Irish area in winter, for Inishtrahull and Rathlin O'Birne are frequented by it all the year round. It does, however, leave at that season the precipitous western islands where it breeds, probably owing to the tremendous seas that beat against them. On the North Aran Island, co. Galway, and also on Aranmore, co. Donegal, flocks are observed in January, February, and March, and again from July to October, while on the coast of Connemara Mr. Howard Saunders has met with amazing numbers in September. The occurrence of Oyster-catchers in flocks during the breeding-season, which is observed on all sides of Ireland, indicates that large numbers, probably birds of a year old, do not breed. In May and the beginning of June considerable flocks have been observed passing Dungarvan Lighthouse; and Mr. Lloyd Patterson has repeatedly seen from eighty to a hundred together in June or on 1st July at the upper end of Belfast Lough; while on the Moy Estuary Oyster-catchers are common in flocks in June.

The shrill cry of this bird is subject to considerable variations. I have heard those which were breeding on the Saltees set up a chorus of twittering or rippling sounds at night.

Oyster-catchers will mix freely with Curlews on the shore, and when feeding on the sands at low water will keep poking and prodding with their beaks as they slowly move along, and when one has secured its prey another will run after it and snatch the prize, just as a chicken will do. They are busy birds, continually searching for food on the rocks at the edge of the tide except at high water, when they assemble in a compact mass on some spit of shingle or low jutting rock with their heads drawn in, perfectly still. Mr. J. E. Palmer has noticed several hopping after the receding tide, and remarked that he had never known any other wader to hop. These birds lay early in May on the Saltees, and I have seen young in down on the 28th of that month, but in the west of Ireland eggs may commonly be found in June.

A gentleman acquainted with the Oyster-catcher's habit of breeding on shingle in England seemed surprised to find it nesting on rocks or turf in the west of Ireland, but it rarely lays on shingly beaches in this country; when it does so, these are usually on islands, to which it resorts for breeding purposes in preference to the mainland. Its favourite breeding places on the west coast are the rocky parts of the islands, where it lays in some little depression in the rock with only a few bits of lichen round its eggs. A pair thus bred on the rocks of the Great Skellig, an island mountain-peak, surrounded on all sides by awful precipices; and Oyster-catchers' eggs have been found on the Bills of Achill, as well as on the Skerds off Connemara. When on rocks, the nesting-site is not at a great elevation, but well above the reach of breakers; it is sometimes in the centre of a clump of thrift. Another favourite nesting-site is the grassy top of a stack or of a hill or elevated portion of an island; in such a position the Oyster-catchers breed on the South Saltee, where I have repeatedly found their nests, on a hill that rises to 200 feet, among projecting knobs of the rocky surface, or in hollows of the turf among bracken. A few bits of bracken stems or dry pellets of rabbit-dung are used for lining. Such a nest is figured by Mr. Kearton ("With Nature and a Camera," p. 193). It contained the unusual number of four eggs, and where this occurs I believe the fourth is laid by a second bird, as the type of its markings distinguishes it, and I find that this has been the experience of Mr. Howard Saunders; three is the usual number, but two are sometimes sat upon.

On the north coast of Mayo Mr. Warren has found Oyster-catchers nesting in the fields close to the cliffs as well as on the rocks and islands. Mr. Barrett Hamilton met with the eggs among sand-hills on the Wexford coast where rocks are scarce, and I have seen a nest among the beans in a field on the Saltees; the hollow contained small pebbles, which are not uncommonly thus used. Oyster-catchers breed on some of the islands in Lough Strangford, generally near their points, not on a straight stretch of shore. Mr. Chichester Hart has taken eggs many years ago on an island in Lough Erne, but this is the only inland breeding place I have heard of, and the Oyster-catcher does not commonly stray inland in this country as it does in parts of Scotland, though specimens have been obtained in various central counties at different seasons.

Both the ground-colour and the markings of the eggs are sometimes deep and rich, sometimes pale and deficient; in one set the ground is of a buffish-white sprinkled over with minute brown-specks. Where streaks occur, these are usually tortuous, uniting groups of spots and sometimes forming a zone, but in other cases they are extended and independent of the spots. Mr. Turle describes a clutch that he found on the Blaskets which were of a pale greenish-blue (*Ibis*, 1891, p. 7). This variation, due to the deficiency of brown colouring matter which leaves the ground exposed, is occasionally found in eggs of the Mistle-Thrush and sometimes also in those of Terns and Gulls.

THE AVOCET *Recurvirostra avocetta*, Linnæus.

Rare and accidental visitor in autumn and winter, chiefly to the south and east coasts.

The Avocet has been obtained in thirteen instances and observed in four or five more, from August until February inclusive. All of these occurred on the coast or on tidal estuaries; eight or nine taking place in Cork; one on the Blackwater, probably in Waterford; three in Wexford; three in Dublin; one in Galway; and one on the Moy, between Mayo and Sligo. In the last instance Mr. Warren, in October 1875, met with a pair which were very unsuspecting, remaining when the Greenshanks, with which

For Sheathbill, see Appendix.

they were feeding, took flight on his approach; he watched their peculiar mode of feeding by sweeping the bottom from side to side with their bills, and he saw them, after alighting in shallow water, swim boldly out against the wind, rising over the little waves with the buoyancy of Ducks. Some of these Avocets were obtained in severe frost, and on four occasions pairs were met with.

Cork. - Two were shot near Ringaskiddy previous to 1830 by the grandfather of Mr. Warren; one was

obtained near Youghal previous to 1840 by the late B. S. Ball (Thompson, II, p. 220); one was killed

near Castletown, Berehaven, some years before 1850 (*Ibid*, p. 221); a pair of adult birds were shot in Cork Harbour in January 1848 (*Ibid*). (These are possibly the specimens now in Queen's College Museum, Cork, though Harvey, who presented them, gave the date of their capture as January 1869.) One was obtained near Youghal on 20th December 1866 (Hackett, in Field, 12th January 1867); another, shot by Mr. Rowland, of Kilboy, Cloyne, was sent to Hackett about the beginning of December 1876; during hard weather in November or December 1878 Hackett received another Avocet (Field, 11th January 1879); one was shot, while feeding in company with a second, at Ringaskiddy on 15th February 1895, and is in the collection of Mr. Barrington (*Irish Nat.*, 1895, p. 166).

Waterford. - An Avocet, which I examined, was shot on the Blackwater before the end of 1880 and preserved at Ardsallagh.

Wexford. - One was seen near Bannow by Warriner previous to 1843 (Thompson). A pair observed by Major Walker on the marsh of Castlebridge, were very wary, running on the mud, and flitting away low under cover of the banks like

Kingfishers, and they frequented the locality for some time (*Ibid*). A young bird of the year was obtained, while feeding alone in marshy ground near Wexford Harbour, by Mr. Gibbon on 24th August 1895 (*Irish Nat.*, 1895, p. 319).

Dublin. - One was shot in the Lots near the North Wall in winter 1767 (Rutty's, "Nat. Hist. of Dublin," 1772, p. 335); one was seen on the coast of the county in January 1848 by Montgomery (Thompson); another was observed by Mr. E. Williams at the North Bull in October 1897 (Dr. Fatten, in *Irish Nat.*, 1898, p. 234).

Galway. - An Avocet, in the collection of Mr. J. W. Kincaid at Mullaghmore, was stated by Glennon, who preserved it, to have been killed in the neighbourhood of the Shannon in the co. Galway during a hard winter, about 1880 or earlier.

Sligo. - A pair were observed by Mr. Warren on the Moy Estuary on 28th October 1875, and remained in the locality until both were killed with one shot from a punt-gun by Captain Kinsey Dover two or three days afterwards; one of these was presented by him to the Dublin Museum (*Zool.*, s. s., p. 4764 [1876]).

THE BLACK-WINGED STILT. *Himantopus candidus*, Bonnatere.

Very rare visitor. Has occurred six times, in Munster, Leinster, and Connaught, but not recently.

Kerry. - A flock was seen, and one bird was shot, on Castlemaine Bay previous to 1850; the observer described their strange appearance when standing, as if unsupported by legs and swaying from side to side (Thompson, III., p. 445).

Cork. - One was seen and followed for some time by Ball near Youghal in the winter of 1823 or 1824 (Thompson, II., p. 221).

Limerick. - Three were seen in company with Lapwings by Fosberry at Adare, some years before 1841 (*Ibid.* and *Proc. Dublin N.H. Soc.*, 1841-42, p. 9).

Dublin. - One was obtained at Clontarf, Dublin Bay, and seen in a fresh state by T. W. Warren previous to 1837 (*Ibid*).

Westmeath. - A pair were seen and one bird was shot, near Kilbeggan, by the late Dr. Battersby, many years before 1890 (More's List).

Mayo. - One was killed on the River Robe, within six miles of Lough Mask, in January 1836 (?) and passed with the Montgomery collection to the Dublin Museum (Thompson, II., p. 222).

THE GREY PHALAROPE. *Phalaropus fulicarius* (Linnæus).

Occasional visitor in autumn and early winter.

Though the Grey Phalarope occurs in exceptional numbers in particular seasons, it is a bird which visits Ireland with almost sufficient frequency to be termed an annual visitant; but it appears here in the same uncertain manner as it does in Great Britain, and in those years when it occurs in the one island numerously it is often found in the other also.

It has been recorded from nearly all the maritime counties of Ireland, most frequently from Dublin, Down and Antrim, where it is more likely to be noticed than elsewhere and brought to taxidermists in the principal towns. These three counties afford fifty-one notices out of a hundred and six from Ireland, but the species has been often observed on the south and west coasts, and in Donegal; it has occurred repeatedly at Slyne Head, a most remote point, very little visited by stragglers, as well as at outlying islands, like the Skelligs and Rathlin O'Birne. The Grey Phalarope has also been taken at several lightships, and has been seen swimming on the sea off the coasts, while six inland counties have been visited: Tipperary on four occasions. The occurrences have been distributed thus:

Kerry.....6	Kilkenny....1	Galway...6	Fermanagh...1
Cork.....6	Carlow.....2	Mayo.....5	Monaghan...2
Waterford.5	Wexford....3		Down.....20
Tipperary..4	Wicklow....1		Antrim.....11
	Dublin.....20		Londonderry.4
	West Meath.1		Donegal.....8
Munster...21	Leinster....28	Connaught .11	Ulster. .46

Ninety-one instances took place in the following months:

January.....3	April.....1	July.....-	October.....54
February...-	May.....-	August.....3	November. 13
March.....-	June.....1	September. 11	December.. 6

This bird's season for visiting Ireland is therefore from August until January, though it appears very seldom in either of those two months, but in October it has occurred more frequently than in all the other months together. Thompson recorded the only statement (made by Dr. Drummond) of an April occurrence, and Watter's had a specimen in grey plumage said to have been shot on 20th June.

Of the years specially marked by the appearance of this bird in Ireland, 1891 is the most memorable. In the October of that year specimens were obtained in Wexford, Carlow, Dublin, Galway, Mayo, Fermanagh, Down, Antrim, Londonderry, and Donegal, small flocks being met with in the two latter counties. In that October, as well as at the end of the previous September, Petrels of different species, especially the Fork-tailed, were strewn over Ireland in an emaciated state, an event attributed to the prevalence of westerly gales. All portions of the country seem to have been visited at that time by the Phalaropes or the Petrels, except the co. Cork and the adjacent parts of Munster.

Most of the Grey Phalaropes which visit this country in autumn are immature, or in the transition state from the summer to the winter plumage.

Many observers in Ireland have noticed the rapid and buoyant movements of this bird which swims and flies with great activity. It sometimes sweeps round like a feather whirled by the wind, quits with agility the pools of water where it has been swimming to feed upon their banks, and rushes back to float with the lightness of a cork upon their surface. While feeding on the water it continues to pick up objects to and fro with such rapidity as to appear to be nodding its head, and it can also dive after its food (Mr. H. Blake Knox). The confidence of these beautiful little birds in permitting the near approach of man results, no doubt, from their being bred in the Arctic wilds.

THE RED-NECKED PHALAROPE. *Phalaropus kyperboreus*
(Linnæus).

Extremely rare and accidental visitor.

Though this species breeds regularly (unless exterminated by collectors) in some of the Scottish isles, the only Irish specimen known was shot by Mr. Joseph A. Haire at Loughgilly, co. Armagh, who noticed it spinning round on the water, and shot it as it rose. Messrs. Williams & Son received it for preservation on 13th November 1891, the year in which so many Grey Phalaropes and Petrels occurred in October in various parts of Ireland.

The specimen, a female, is now in the Science and Art Museum, Dublin. I was informed in 1890 by Mr. William Sinclair, of Drumbeg, co. Donegal, that his son, Major Sinclair, shot there a Red-necked Phalarope out

of three in August 1869, but I have not been able to trace this bird, and merely mention the statement in case Major Sinclair, who went to India, may here after have the specimen fully determined, if it still exists.

THE WOODCOCK. *Scolopax rusticula*, Linnæus.

Breeds in the woodlands of every county, haying greatly increased in such localities in summer. The winter immigration, lasting from October until March, is at its height in November and December, and is both numerous and widespread.

The Woodcock has for centuries visited Ireland in large numbers, for Giraldus wrote: "There are immense flights of Snipes, both the larger species of the woods and the smaller of the marshes"; and the abundance of the species in Ireland was thus alluded to in Smith's "Kerry" (1756): "The woodlands near the River Shannon abound with prodigious plenty of Woodcocks in their season. "Within living memory, however, these birds are thought to have diminished in winter in the counties of Cork, Kilkenny, and Donegal; still their numbers fluctuate much from season to season as well as from month to month.

The latter half of October is the ordinary time when the first migratory flocks arrive on all sides of Ireland, and they may then be met with resting for a day or two among the sea-banks or the heather-covered slopes above cliffs; Mr. P. O' F. Johnston, who resides on the Aran Islands, has shown me grassy hollows above the huge cliffs west of Dun Ængus, where he found fifty or sixty in an emaciated state; and, speaking from recollection, he placed the time in September. The early arrival of Woodcocks on the north and west coasts has been reported by many; thus Thompson was informed by Jackson, Lord Bantry's keeper, that he had invariably found them near Dursey Island, off the west of Cork, before they appeared inland, and more recently (*Field*, 2nd February 1895) Mr. T. J. Dennehy mentions a promontory in Kerry where Woodcocks have been frequently seen to land, even in the daytime, arriving singly from a SW. or SSW. direction. This may be accounted for by presuming that the birds which have followed the southern coast-line turn northward when our land's ends are reached. Some fail to do this and perish in the Atlantic, for a passenger crossing to America has observed numbers floating dead upon the sea a long distance from land, and a similar occurrence was noticed off Cornwall (*Zool.*, 1848, p. 2023), as mentioned in "Yarrell," 4th Ed., III, p. 325. Woodcocks have been repeatedly observed during the three last months of the year at southern rock-stations, but especially at the Skelligs, and less frequently at the Tearaght (Migration Reports). In the vicinity of the Aran Islands, Woodcocks have been flushed on the hills near Kilkieran in Connemara the second week in October, and Major Rutledge Phair, who knows Achill well, has spoken of the early cock-shooting there (Mr. T. M. Pike, in *Field*, 19th January 1895); while Thompson was told of birds that had been seen in Achill as early as 10th October. Sir R. Payne-Gallwey makes several suggestions to account for the presence of large numbers of Woodcocks on the western sea-board in early winter, such as that their flight is continued until it is arrested by the ocean, in the vicinity of which the mildest weather obtains in winter.

An instance of Woodcocks arriving in the North of Ireland is given by Lieut - Colonel Cuppage, who observed near the coast a flight of about a hundred coming towards him, which alighted in a wood in so exhausted a state that he caught some and found them in poor condition, so that he released them (*Field*, 6th April 1872).

The evidence of the Migration Reports (as I gather it from the complete series, 1882-1897, generously placed at my disposal by Mr. Barrington) points to Ulster as the province in which Wood-cocks arrive in the greatest numbers, more than half of the notices from the whole Irish coast being from Ulster lighthouses.

The extreme northern island of Inishtrahull is decidedly the richest in records, and this seems to show that it lies in the way of Woodcocks coming down the west coast of Scotland or which have crossed it by the "Great Glen." Such an idea is strengthened by the numbers reported from Aranmore, Rathlin O'Birne and Killybegs, on the western coast of Donegal, and accordingly the birds which arrive from Scotland appear chiefly to take this direction; others, however, in smaller numbers, strike the Maidens and the Copeland Islands, off Antrim and Down. The earlier arrivals, too, are in larger proportion on the Ulster coast than on that of any other province.

When the paucity of the records from Leinster is compared with their frequency from the north, one is led to conclude that most Woodcocks which visit Ireland come from the direction of Scotland rather than of Wales; even the Tuskar affording only a few notices. There are, however, enough of observations and of specimens from the Wexford coast to show that some of these birds land there; and this is corroborated by a statement of Mr. E. A. Gibbon, who lived at Rosslare, and who has repeatedly met with Woodcocks among the

sandhills near the shore in October and November, especially after a south-east gale. At such a time Woodcocks have been found there entangled in the nets spread out to dry on the bent-grass.

The Migration Reports further show that October, November and December are the chief months of the arrival and movement of this species on the Irish coast, especially the two latter months. After December there are very few of these birds noticed at light-stations, except in Ulster, where the observations then diminish and practically conclude with March, the departing birds being seldom seen. An occasional Woodcock is, however, recorded by the light-keepers, even through the summer.

For some weeks after their arrival, if the weather be mild or wet, Woodcocks are scattered over mountain-heaths; and they are found during most winters on islands like Achill or Aranmore as well as on moors near the west coast of Donegal and Connemara; but if heavy westerly gales occur in November in the latter district, it is a bad season for "Cock" west of the Maam Turk Mountains. As frost comes on, these birds betake themselves to the covert of woods and deep glens by day, and this has led to the Baying among covert-shooters that Woodcocks come with the first snow-shower. They are uncertain birds, for they may be plentiful in a place one week, and the next scarcely one can be found there; and the same uncertainty applies to their appearance from year to year, except in large and favourite coverts.

When severe frost and snow sets in, Woodcocks leave inland districts, and even the east coast, to seek the western and southern sea-board and the outlying islands; while there is at the same time an influx from Scotland into the North of Ireland (Thompson, II., p. 238). Sir R. Payne-Gallwey describes the numbers that were taken in Kerry and Clare during the frost of January 1881, when he counted eight hundred laid out on benches on one occasion; they were not only shot, but killed with sticks and stones in ditches and clumps of furze, and brought for sale by the peasantry in sacks. At such times Woodcocks will resort to the sea-shore and feed on shell-fish among the rocks and sea-weed; but though driven from their usual haunts they are said to retain their condition far better than other birds.

In several parts of Ireland the Woodcocks, which diminish in January, reappear from the middle of February to about 7th March. Thompson was informed that this was the case in co. Wexford, in Achill and the Ards, co. Down, and that in the latter locality a strong easterly wind in spring detained them. In Kerry the same thing has been observed, for these birds, preparatory to the spring migration, again gather from the inland localities towards the west coasts, as though they would commence their return migration from the point at which they had arrived in autumn (Mr. Denneby, in *Field*, 2nd February 1895). Mr. Pentland states that he always sees Woodcocks in co. Louth about the first week in April, but that they are gone by the middle of that month; while in Inishowen, the northern peninsula of Donegal, these birds arrive early in autumn and linger in the heath until April is far advanced (Thompson, II, p. 243). It will thus be seen that, as in the case of other species, many Woodcocks which only winter in Ireland are still in the country when those which are resident are already breeding.

In its habits this is a nocturnal bird, loving to hide by day under some holly, spruce, or other thick bush, and at times creeping under briars or along deep drains, from which it has difficulty in escaping when surprised. It is very adroit in evading shot, and getting a tree or other obstacle between it and the shooter as it flies off; and when it alights again it will run a considerable distance before it can be overtaken. When issuing from their coverts to feed, Woodcocks take the same course evening after evening, and in the breeding-season they follow regular beats in their flight over the woods, which is taken up about an hour before dark. In a largely frequented place it is no uncommon thing to see from twenty to thirty flying about the woods and glades; and at such times they will chase each other and call excitedly (Pentland).

A Woodcock's approach on an evening in early summer is usually announced by notes of two sorts which it then utters on the wing; there is a croak, often repeated thrice, which has aptly been compared to the words "more rain to-morrow," uttered in a croaking voice, or by others compared to "croho, croho." I have seen the bird's body deflected at the third croak while outlined against the sky. The other note which often immediately follows the croak is a chirping screech syllabled by Mr. Moffat "chizzic."

Both these notes are to be heard from the commencement of the breeding-season in March, but most frequently in April, May and June, and the shrill screech has been noticed in November as the bird flew out at dusk; Mr. Pentland believes that it is not alone the males that croak and call, for he remarks that when Woodcocks are flying about in Bummer, everyone, without exception, is calling, and that females as well as males must be on the wing. Mr. Moffat, moreover, states that when they are thus playing about two may frequently be seen to dart alongside each other for a few hundred yards, chirruping loudly and excitedly as if in defiance. A bird was observed here flying across the hill slope, uttering the shrill note, when two others, that had been calling similarly in a corner of the wood, flew up and followed it, when they were all heard croaking; the two birds may have been young ones, as it was the 13th May. The alarm cries uttered in anxiety for the young are

alluded to below, but besides these several notes I have heard a Woodcock when flushed in November utter a clucking sound like "uk, uk, uk."

Thompson has shown that these birds vary their staple diet of earthworms with vegetable matter, insect larvae, and beetles mingled with small pebbles.

As to the former breeding of the Woodcock in Ireland. Mr. Moffat in his paper in the *Irish Naturalist* (1899, p. 109) points out that in the Act passed by the Irish Parliament in 1786 the name of this species is omitted from the list of those game-birds whose eggs are to be protected, and he argues from this omission that the Woodcock was not known at that time to breed in Ireland. In support of this view it may be said that Rutt (1772) enumerated the Woodcock among the winter birds of passage and wrote:- "It comes about Michaelmas and disappears about March." Moreover, in Smith's "Cork" (1750) it is remarked that this bird had been "known to breed in England," as though unknown to do so in Ireland; but the same writer in his volume on "Waterford" (1746), after stating that Woodcocks were birds of passage, said: "they pair before they go" and "sometimes stragglers, left behind when their fellows go off, remain in these countries all the summer." Now, if this referred to Ireland, it may be concluded that such "stragglers" sometimes bred here. There is some reason to think that the Woodcock may have been known to the Irish in summer for a very long time, as their name for it is C???? (pronounced "Crower"), an imitation of the bird's croak uttered in spring and summer; and we may form some idea of the antiquity of Irish names when it is considered that the Magpie has had none given to it in our ancient language, though established in the country for more than two centuries. The earliest cases of breeding known to Thompson were in the following counties:- Queen's County 1833, Wexford and Antrim 1834, Down 1835, Wicklow 1837, Sligo 1838, Waterford (at Gurteen) 1841; thus, when he first became aware of the matter, the breeding range of the Woodcock extended into each of the provinces, but Mr. W. Sinclair, who remembered the earliest case at Lord de Vesci's, in Queen's County, told me that it was considered at the time very remarkable. A rapid increase was noticed in the number of nests at Tollymore Park, the first having been discovered in 1835; in 1837 three nests were known there, but in 1847 to 1849 there were not fewer than thirty each year.

About 1860 the breeding of the Woodcock began to be a generally recognized fact throughout Ireland, and since that date the testimony as to its increase comes from all parts of our island; while in some wooded districts, such as in Wexford, Queen's County, and Fermanagh, the birds observed in summer are thought to be more numerous than those met with in winter, nests being from time to time reported from new districts; the only county where they appear to be still few is Mayo.

Mr. Pentland, in the *Field* (29th September 1889), gives an account of the breeding of the Woodcock at Glenstal, co. Limerick, where, in 1870, the first nest found was looked upon as a curiosity, but next year three or four were known, and from that time they kept gradually increasing until, in 1889, fully a hundred pairs were believed to be nesting there. This remarkable augmentation has certainly been favoured within the century now ending by the extension of plantations, though the similar increase that has been going on in Great Britain indicates a more deep-seated cause.

There can be no doubt that the Woodcock is double-brooded, for the first laying is in March or April and young have been repeatedly seen the first week in April; but eggs are still met with in June or July, and very young birds have been seen in August. An exceptional instance in Donegal is related by Mr. R. W. Norman of a Woodcock found sitting on eggs in November, when woods were being beaten. The eggs may indeed be found at any time from March to July, and young in down from April to August. The ordinary number is four eggs, but three are said to be sometimes sat upon, and five have been found in a nest. They are less pointed than those of most Limicolæ; some are heavily zoned or blotched, their ground being of a decidedly brown tint, while others have small rounded spots and specks on a very pale surface. The nest is made on the ground on a high-lying dry spot in a wood or among scrub, frequently near the foot of a tree and overshadowed by the branches, if there be a clear space beneath them; but it is never in a thick tangle, as the bird likes to have an open way of escape. A nest was once found among trees close to Horn Head House, overlooking the sea. Woods of oak are no doubt preferred, but I have seen Woodcocks' nests in plantations of young Scotch firs or under larch or spruce. The nest is sometimes a mere depression in the dry grass or wood-rush, but a ring or edge is usually made of dead leaves, bits of bark, fir-needles, furze or any dry rubbish available, and is often lined with dead oak leaves, in other cases not lined at all. The illustration is from a photograph taken by Mr. John Malcomson Murphy and kindly placed at my disposal. The bird sits with its tail to the neighbouring tree and with its neck drawn in. It will not only permit of near approach, but has sometimes been touched before taking flight when the eggs were much sat upon.

If an intruder approach the young, the parent bird will fly round instead of away from him; and when its alarm is strongly excited, as by the presence of a dog, a Woodcock will utter out-cries that have been compared to the screaming of a Hawk, and tumble on the ground before the object of its apprehension. I was informed

by my late gamekeeper, Richard Wolfe, that when he was walking with beagles through a wood where these birds were breeding, one of them alighted in front of a dog and, running forward, flapped its wings at the animal with loud cries.

The Woodcock, however, frequently flies away with the young one, not only when newly hatched, but even when it looks nearly as big as an adult, and this is done both to save the nestlings from danger and to remove them to the feeding-ground. A woodman at his work has seen an old bird carry off the brood one by one in the same direction without regarding him. Mr. Colgan, the Brittas keeper, flushed a Woodcock carrying its young, when the former flew a little distance and uttered vociferous croaking; he sat down and the bird came running back towards him, evincing no shyness, and then began to flutter and throw out its wings on the ground until it had succeeded in grasping with the feet another nestling, with which it flew away. Many persons in Ireland have seen this bird fly off with its young, some asserting that the latter was pressed close to, the breast of the parent between the legs, and objection is made by these observers to the plate in the *Zoologist* (November 1879). The bird seen by the Ron. R. E. Dillon bent her tail down close to the body of the young one, which was held clasped between the thighs and tarsi, and Lord Clermont described a somewhat similar sight (*Zool.*, 1880, p. 258); others, among whom is Mr. Moffat, describe the young as "seeming to hang between the legs" of the old bird, "dangling from her lowered legs," "not pressed against her body, but held with out-stretched legs." The nestling thus carried in Mr. Moffat's presence was just hatched and more easily lifted, but a greater effort would be required to lift such a bird as that seen by Mr. Digby (*Field*, 30th May 1891), and such would naturally be held in a closer grasp.

In several cases the bill has been seen, not pressed against the young, as once described to me (*Zool.*, 1882, p. 306), but held in the usual way. The brood leave the nest very soon and are said to be fed by the parents, but confirmation of this is desirable.

Woodcocks are rarely seen in August, while towards the end of that month and during September the records of their occurrence are so few that most people believe they have then left the country. However, Mr. Campbell, the keeper at Mourne Park, co. Down, wrote:- "They betake themselves to the sandy hills in the outside coverts in August and September to moult; and there they can be seen in September" (*Field*, 14th June 1884); Mr. James Johnston has also stated that in September he has, by means of a spaniel, found Woodcocks, unfit to shoot, moulting their feathers freely, and that until their quills are grown they are as hard to flush as the Water-Rail (*Irish Nat.*, 1893, p. 85); at the same time he has found young birds of the year fit to shoot. It would, however, be premature to conclude, until more observers have detected them in different parts of Ireland, that all our breeding Woodcocks remain in the country; some of the young certainly remain until winter, for Mr. Pentland stated that one of nine which had been marked at Glenstal was shot there about Christmas.

Statistics of remarkable bags are given in the "Fowler in Ireland," by which it appears that on the Muckcross Estate, near Killarney, 1,250 Woodcocks were shot in the winter of 1863-64, and that at Ashford, Lord Ardilaun's estate in Galway, six guns shot 165 birds in one day in January 1880; since then 172 and 177 Woodcocks have been bagged there on single days in January 1884 and 1886, and Mr. A. J. P. Wise informs me that in the severe winter of 1880-81 he got 560 in Kerry.

Pure white, partially white, and buff-coloured Woodcocks have been obtained in Ireland.

THE GREAT SNIPE. *Gallinago major* (J. F. Gmelin).

Very rare visitor, appearing during the last four months of the year.

The Great Snipe has been so often talked of and so seldom authenticated in Ireland that it is difficult to have an exact estimate of its degree of rarity; but Thompson stated that he had never seen one, and Messrs. Williams & Son had been preserving birds in Ireland for twenty-five years before they received a specimen, though many large examples of the Common Snipe had been sent to them in the belief that they were of this species.

It may be well to remind those who desire to distinguish it that the bill and legs are shorter in proportion than in the Common Snipe, and the underparts more barred, while there is more white in the tail-feathers of the Great Snipe; moreover, its weight is from 7 to 10 ozs., and its tail-feathers number sixteen, the weight of the Common Snipe being usually 4, exceptionally 6 ozs., and its tail having normally but fourteen feathers.

Twelve instances, which are mentioned below, have occurred in the following counties Cork (1), Wexford (2, or more), Kildare (3), Galway (1), Mayo (2), Leitrim (2), Tyrone (1).

In nine cases the months are known, and are as follows; - September (2), October (4), November (2), December (1).

Thompson mentions one instance in which a couple were met with; his informants described this bird's partiality for fields of long grass in the vicinity of marshes, its mode of rising without a cry, of flying more slowly and steadily than the Common Snipe, holding its tail spread out.

Cork. - A specimen which was sent to the Editor of the Field was shot near Clonakilty on 17th November 1879 by Mr. Thomas Gillman (*Field*, 22nd November 1879).

Wexford. - Major Walker, who gave Thompson a very circumstantial description of this bird, stated that he had shot it on different occasions before 1830 or 1831; a specimen in the collection of Sir R. Payne-Gallwey was purchased by him from a gun-maker in Wexford in 1881, and was stated to have been shot within a few miles of that town.

Kildare. - A Great Snipe was shot in co. Kildare in November 1841, and was seen by T. W. Warren in Glennon's hands (Thompson, II., p. 259); two, which were described, were shot near Sallins in October 1827, and were given to the Earl of Errol (*Ibid.*, p. 261); an adult female, in the collection of Watters, was obtained in the same county in 1849 (Watters "Birds of Ireland," p. 148).

Galway. - The specimen in the Dublin Museum was presented by Mr. W. H. Persse, of Glenard,

and was shot on 12th October 1898 (*Zool.*, 1889, p. 33, where his name is mis-spelt "Reese").

Mayo. - A bird of the year was shot on Keel marsh, Achill Island, on 24th September 1888, by Mr. R. Livesey (*Field*, 6th October and 10th November 1888); a female was obtained near Ballycroy, not far from Achill, on 13th October 1893 by Mr. T. L. Mason (Williams, in *Zool.*, 1893, p.434).

Leitrim. - A specimen, sent to Glennon and seen by T. W. Warren, was shot in co. Leitrim on 6th December 1845 (Thompson, II., p. 259); another was obtained in the same county the first week in October 1888 by Major Hutchinson, of Rookville (Williams, in *Zool.* 1889, p.75).

Tyrone. - Mr. E. Williams informs me that he received for preservation a Great Snipe shot by Mr. H. B. Fleming; of Campsie House, Omagh, on 8th September 1899.

THE COMMON SNIPE.

Gallinago caelestis (Frenzel).

Breeds locally in every county, in many counties commonly. Numbers greatly increased by migration in winter.

Ireland has for centuries been known as a favourite resort of the Snipe, which frequents the bogs and wastes, often in very large numbers during winter, and breeds freely in spring and summer. It is more numerous in those parts which abound in marshes and moors, such as are to be found in the West; but even there the Snipe-shooting, formerly so famous, has greatly fallen off since the multiplication of breech-loaders has reduced the stock of birds. From the statistics given in the "Fowler in Ireland" it appears that from forty to sixty have not infrequently fallen before a single gun in the day, and that even as many as a hundred have been thus obtained in rare instances. I am informed by Colonel Vernon that during a portion of the severe winter of 1880-81 he shot in Kerry 1,073 Snipe and could have killed a much larger number, but they became worthless from starvation; the same winter a well-known Snipe-shooter is said to have got as many as 1,376 in the co. Clare. In such hard frosts, which seldom occur in Ireland, a great influx of Snipe come across from England, where they disappear at the same time and betake themselves to the western side of Ireland, and even to the marine islands; this movement extends to Valentia and the coast region south of it, being only stopped by the Atlantic, but western Connaught is not resorted to on those occasions to the same extent. Most of the larger islands are visited by these birds regularly in winter, and Inishtrahull, Tory Island and Rathlin O'Birne are resorts of this kind where small flocks up to twelve in number have been seen; while in the bogs of Rathlin many remain to breed, as a few do on the Copeland Islands. Even the rocky and precipitous Tearaght is visited-though not for long at a time-by wandering Snipe, as the Migration Reports show. Accordingly, as this bird makes itself at home near so many light-houses, the records of its occurrences near them throw much less light on the migrations of the species than in the case of the Woodcock - a bird that is seldom seen on such islands as the above except when it is migrating. The preponderance of observations made at Ulster light-stations is, however, an obvious feature in the reports on Snipe. The first increase of the species is noticed in September, but the great annual influx takes place in October, and the records go on increasing until December; after which they gradually diminish until March, and show that a few birds are seen in April and still fewer in May. On the north coast of Dublin, Snipe may be heard arriving from October to December, and appear to come from the north-east. Thompson considered that the flocks sometimes seen near Belfast in August were

migratory arrivals which passed on southward after a few days, but that the birds which remained through the winter in that part of Ireland did not arrive until about October.

The winter-visitors, called by some "brown Snipe," are believed to be distinguishable by colour and markings from the birds reared in this country, which are greyer. Cox remarked that in hard weather almost all the Snipe met with are home-bred birds, and he had noticed in several parts of Ireland that the longer the frost and snow lasted the smaller was the proportion of foreign birds killed, thus suggesting that the Snipe which are bred in Ireland do not migrate to anything like the extent of the others. Similar remarks have been made by Mr. G. H. Kinahan.

The Snipe fluctuates a good deal in the places it frequents in winter, not appearing even in favourite haunts until these become saturated with wet, and leaving them when frozen for spots softened by springs, or for counties where the cold is tempered by the vicinity of the ocean. The state of the moon, too, influences Snipe in their resorts, for moonlight enables them to disperse themselves widely, and afterwards to return to their marshy retreats before morning; while darkness, coming on when they are out feeding, leaves them on their feeding-grounds, on uplands, for instance, or stubbles, or those river-meadows called "callows," where they may be found lying out next day. I frequently meet with Snipe on dry hills 400 to 500 feet high in grassy places among furze and heather. In wet ground one can judge better where to find them, as they have a partiality for certain spots, and may usually be found about a quagmire. Thompson states that they will feed, not only at the edge of the sea, but on the banks of *Zostera*. Sir R. Payne-Gallwey, who corroborates their feeding on the ooze during frost, remarks that Snipe and Woodcock love to wash their mouths free from the soil which collects there when worms are swallowed, and round the base of the bill the mud is often encrusted from the bird's habit of probing the soil. Dr. E. Blake Knox states that he has known Snipe thus to probe the stomach of a putrid animal for the maggots it contained.

The clucking note *tyik-tyuk* is uttered during the breeding season when the bird is perched, but the shrill scream is delivered on the wing, and this seems to serve both as an alarm-cry and a call-note. The bleating or drumming, which is apparently produced by the wings as the bird swoops or dives through the air, is characteristic of the breeding season; it has been heard in this country as early as February and as late as July. This sound seems expressive of pleasurable emotion when produced as the bird soars overhead on a spring evening, but Mr. H. L. Orr describes a Snipe frightened off its eggs as uttering the bleating sound within a few yards of him (*Irish Nat.*, 1899, p. 267); Snipe will thus bleat or drum when sprung by a dog in the nesting-time.

The eggs are sometimes found during the latter half of March, more frequently in April, and occasionally as late as the 25th July, on which date I have seen a clutch taken that was nearly fresh. As many nests contain eggs in June, there is reason to believe that second clutches are laid. Snipe breed indifferently on mountain bogs and on lowlands, a rushy field being sometimes the nesting place of several pairs. The ground-colour of the eggs is of various shades of brownish-buff or pale olive, but is sometimes of a greenish hue, and in addition to the blotches, which often form a zone, a reticulated pattern of black streaks surrounds the larger end of some, while in others the entire surface is dotted with small specks.

The melanic form known as Sabine's Snipe has been obtained fully forty times in Ireland, though the localities of not more than thirty specimens are now known; these were scattered in all quarters of the country, but there is only one record from the east coast (Barrett-Hamilton, in *Irish Nat.*, 1895, p. 12). Some examples are much darker than others, and in some such the longitudinal markings on the back disappear; while a state of plumage intermediate between Sabine's and the ordinary form has occurred in Ireland and has been described by Mr. Harting (*Proc. Zool. Soc.*, 1877, p. 533).

There have been instances of white Snipe, and of others which are buff or straw-coloured; of the buff type a specimen is preserved at Brockley Park, Queen's Co., with two Woodcocks of the same buff-colour. Large Snipe are often shot weighing sometimes from five to six ounces; Dr. Burkitt had one which weighed the latter amount, and A. G. More recorded another.

THE JACK SNIPE. *Gallinago gallinula*, Linnæus.

Winter-visitor, distributed locally throughout Ireland, being decidedly less numerous than the Common Snipe.

An occasional Jack Snipe is commonly met with when Snipe shooting, and the bird is well known in all parts of the country, but in the north it appears to be much more numerous than elsewhere if, we may judge by the numbers killed in seven years, chiefly within ten miles of Belfast, by a friend of Thompson. He shot 603 Jack

Snipe to 2,077 of the Common Snipe, being a proportion of about 29 per cent. Thompson, moreover, informs us that this gentleman had shot as many as fourteen in one day; but this was exceeded by Mr. H. R. M. Barton, who once obtained seventeen within an area of about an acre near Dundalk, possibly after their arrival. Mr. H. D. Hart thinks that the Jack Snipe is more numerous than the Common Snipe in Fanad, a northern district in Donegal, where he resides; but this is certainly not the case through Ireland generally, where the species is comparatively scarce, and if several are seen about the same locality, as has occurred to me in certain seasons, it is looked upon as unusual. It is not indeed a common thing to meet with more than two near the same spot, and one never sees a wisp or small flock of Jack Snipe as in the case of the common species.

The Jack Snipe has been obtained in Ireland as late in spring as May, and again as early as August, but even in September its appearance is remarkable, October and November being the chief months of its arrival in this country. Cox remarked that it is more numerous towards the end of November and in the beginning of December than at any other time, and after March few are observed, though some remain into April, and previous to their departure numbers are said to have been seen on the mountain of Forth, near Wexford (Thompson, II., p. 280). It is stated upon the authority of Ball that he had met with the Jack Snipe on the Dublin mountains at midsummer (Ibid.); but as the Dunlin has since been found breeding there, a possibility exists that this and other alleged occurrences of the Jack Snipe in summer may have been of the former species.

Of thirteen specimens sent him from light-stations Mr. Barrington has received ten from Leinster, but from the light-keepers scanty observations of this bird, the Ulster coast and Inishtrahull would appear to be often visited, and the coasts of Munster and Connaught rather less frequently.

I have often remarked how this little Snipe permits of near approach, and when started will after a short flight return silently to almost the same spot.

THE BROAD-BILLED SANDPIPER. *Limicola platyrhynca*
(Temminck).

Has been once obtained, near Belfast.

The only authenticated Irish-taken specimen of the Broad-billed Sandpiper was recorded by Thompson ("Natural History of Ireland," II., p. 282). It was killed with Golden Plover and Dunlins at the same shot from a swivel-gun on the mud-banks of Belfast Lough on the 4th of October 1844. It proved to be a male, and was presented by the late W. Darragh to the Belfast Museum, where it is still preserved (Moffat, in *Irish Nat.*, 1898, p.40).

THE AMERICAN PECTORAL SANDPIPER *Tringa*
maculata (Vieillot)

Has once been obtained, near Portumna on the Shannon.

A male Pectoral Sandpiper was obtained by Mr. E. Williams in the Dublin Market in the middle of October 1886. It had been received among a lot of Snipe from Portumna, co. Galway, and was extremely fat. This specimen is now in the Science and Art Museum, Dublin, and would probably have been unrecognized if it had not met the discriminating eye of Mr. Williams (*Zool.*, 1889, pp. 32 and 73). This is an example of an American species obtained in Ireland, whose passage could not have been assisted by ocean steamers, like that of a Passerine bird.

BONAPARTE'S SANDPIPER. *Tringa fuscicollis*, Vieillot.

Is believed, on circumstantial evidence, to have been once obtained in Ireland.

There is a specimen of Bonaparte's Sandpiper still in the Belfast Museum, of which Thompson gives the particulars which were known to him. He believed it to have been killed in this country, presumably on Belfast Lough, before the 15th of April 1836. Thompson published an account of the occurrence in the "Annals of Natural History," Vol. XVIII., p. 311, which he quotes in his "Natural History of Ireland," V 01. II., p. 297.

THE DUNLIN.

Tringa alpina, Linnæus.

Breeds in small numbers in many parts of Leinster, Connaught and Ulster. Abundant on the coasts in autumn, winter and spring, when it is the most numerous of the shore-waders.

Of the breeding of the Dunlin in Ireland Thompson had very little information, but there is now evidence to show that its breeding-range extends through this island as far south as the fifty-third parallel of latitude, perhaps a little further. Its eggs have been taken on the Wicklow Mountains by the Rev. A. Ellison, by Mr. J. Darling in Mayo, and by Mr. Campbell near Lough Swilly; while I have taken them in Westmeath, on the Londonderry side of Lough Beg, and in a marsh in Donegal, where the species breeds numerously. It has also been seen, singly or in pairs, in breeding plumage, during May or June in the following counties: - Clare, Queen's Co., King's Co., Longford, Galway, Roscommon, Sligo, Leitrim, Cavan, Fermanagh, Armagh and Tyrone; and in most of these counties the circumstances under which I saw the birds left no doubt that they were nesting in the vicinity.

Dunlins betake themselves in the end of April and in May to their inland breeding-haunts, and, while females are hatching there, others may be seen together in parties or small flocks. The wisps that are to be met with later than this, on such places as the North Bull, Dublin Bay, have been found by Dr Pat ten to consist of non-breeding birds, and this agrees with the habits of other *Limicola*, as observed by Mr. Warren, on Killala Bay.

Thompson states that flocks return to Belfast Lough after the breeding-season as early as the 3rd or 5th July, fully two hundred having been seen on the latter date in 1840. On Dublin Bay and further south, August is the month when they reappear, and they increase on the coasts until October, when their numbers become enormous, and thousands may be seen during the winter on those larger inlets which have extensive banks of mud. Mr. Warren found Dunlins much more numerous on Queenstown Harbour and its branches than on Killala Bay, which is sandy, and he knows that on the former his grandfather once killed a hundred and twenty with his ordinary double-barrel; Thompson also speaks of the multitudes which frequent Belfast Lough, and describes their beautiful evolutions. Though this species is usually confined to the coasts in winter, the above writer has observed small flocks on the borders of Lough Neagh at the end of September, and the Rev. C. Irvine has known a flock to remain for some days in the centre of co. Tyrone early in March, when there was a hard frost.

At the end of April or the beginning of May, when the breeding plumage has been assumed, there is a great influx of Dunlins on Belfast Lough, which Thompson believed to consist of birds that had passed the winter further south; and it may be remarked in this connection that of the specimens in Mr. Barrington's collection killed at lighthouses eight occurred on the east coast in April and May, at which time of year, as well as in October and November, there seems to be a special movement of these birds round Ireland.

Dunlins feed near the edge of the tide, and do so at night, both in moonlight and darkness; at that time they are easily approached. Mr. Warren saw one of these birds in great distress with a cockle about the size of a hazel-nut that had closed on its beak, and of which the creature was unable to divest itself. Dunlins often feed in company with Turnstones, Ringed Plovers and Redshanks, on the shore, and one of them has been seen to accompany Golden Plover in their mountain breeding-haunts in June, taking flight with them from place to place; an instance of this in Achill is related by Thompson, and another took place in Wicklow.

The note of this bird is a trill, and is briefly uttered when taking flight, more at length when on the ground; in the latter case many individuals will join in it, so as to produce quite a volume of pleasing sound, that has been described as a purring whistle. Some have called it a song, as it is uttered spontaneously by the birds when at rest, but as it is produced by many in company it may rather be compared in character to the chorus of Redwings in the tree-tops before they leave us.

The earliest eggs I have heard of in Ireland were found in Mayo on 17th May, and the latter part of that month and the beginning of June seems to be the usual time of laying, though I have found eggs which were nearly fresh on 14th June. The nest is made in long coarse grass, sometimes beside lakes and rivers in the heart of the country, as in Westmeath; sometimes by the coast, in marshes adjoining the sand-hills or on reclaimed slob-lands, as in Donegal. It has been found by Mr. Ellison on the top of the Wicklow Mountains, 1,700 feet above the sea, where the moor was covered with moss, stunted heather and patches of cotton-grass, and studded with small ponds of peaty water. This nest was a tiny cup-shaped hollow, without cover, in a patch of grey moss, surrounded with a few wiry bents and scraps of heather, and neatly lined with shreds of lichen, and a few scraps of heather and dry bents. In low lands the tussock of coarse grass in which the nest is placed usually overhangs the eggs, and the cup is comfortably lined with dry grass, but a small isolated bank in a northern lake contained two nests of Redshanks, one of Common Sandpiper and one of Dunlin among the

green grass which was not long enough to cover the eggs. Thompson was evidently mis-informed by his boatmen, who stated that the eggs of this species were laid on the gravel like those of the Ringed Plover. I once found, sitting on eggs, a Dunlin which fluttered along the ground from my feet, trailing its expanded tail, and then settled down in full view a few yards away, gathering itself up into a shapeless lump, and remained motionless.

In June the Dunlin, presumably the male, will rise from its breeding-ground with rapid whirring flight, and when it attains a certain height will project itself in the air with the acquired impetus, holding its wings motionless and soaring thus for a few moments. This appears to be a performance analogous to that of a drumming Snipe.

THE LITTLE STINT. *Tringa minuta*, Leister.

Autumn-visitor in small numbers, chiefly recorded from the bays of Dublin and Belfast.

Thompson gives a list of the occurrences of the Little Stint on Belfast Lough, principally on the co. Down side, on fifteen autumn seasons from 1831 to 1849; the largest number of individuals met with on one occasion having been nine, while frequently there were one or two. Though not so systematically kept, there are quite as many records of this bird's occurrence on the Dublin shores, which show that it must visit the east coast pretty regularly in equally small numbers. The only occasion on which many have been reported was on 7th September 1892, when Dr. Fatten believes he saw quite sixty of these birds on the North Bull, Dublin Bay, some of them mixed with other small waders, while others were in separate flocks of fifteen to twenty. Besides the two localities named, the Little Stint has been reported from exceedingly few places in Ireland, but it must not be inferred that this proves the species to be generally very rare, for no birds attract so little attention in this country as small Sandpipers. Thompson mentions that Chute had twice procured Little Stints near Tralee, and the Chute collection still contains one; another was obtained on the 'River Barrow near New Ross in co. Wexford (Mr. Barrett-Hamilton); there are two notices of four having been shot on each occasion at Fortrush in Antrim, and one from the River Bann is in the Dublin Museum; two were shot at Inch and one at Fintragh, both in co. Donegal.

Several of Thompson's instances were in August, but September is the usual month of this bird's appearance, and it does not seem to stay long. It has occurred in a few cases in October and November, and once in December. It never seems to have been obtained in spring, but Thompson states that on 26th March 1835 a flock of five were observed on Belfast Lough. If these were Little Stints, they are the only individuals recorded in spring.

When ill company with Dunlins, these birds keep pace with them on the wing. Dr. Fatten says that the very straight flight and the voice, which sounds as a delicate high-pitched twitter, are characteristics by which Little Stints may be known, besides their diminutive size.

TEMMINCK'S STINT. *Tringa temmincki*, Leister.

Has once been obtained, in January.

Thompson was informed by Chute, in February 1848, that the latter had procured a Temminck's Stint, killed at a freshwater pool near Tralee, during severe frost, at the end of the preceding month of January. The bird was alone at the time. Mr. Howard Saunders states that, with the exception of this individual, the species has not been known to remain during winter in the United Kingdom; and the locality, so far to the south-west, shows that the bird probably accompanied other fugitives to the Kerry shores in frost and snow. Thompson does not appear to have seen the above specimen, but in 1893, when I inspected the Irish collection at Chute Hall, I found that it contained a Temminck's Stint in winter plumage, and I noted that the shaft of the outer primary was nearly white, while the two outer pairs of tail-feathers were white, except a narrow band of brown on the outer web. This is without doubt the specimen of 1848, but none of the birds in the collection are labelled. A Little Stint mounted in the same case is easily distinguishable.

THE CURLEW-SANDPIPER. *Tringa Subarquata*
(Güldenstädt).

Autumn-visitor, not common. Very rare in winter and spring.

The Curlew-Sandpiper is best known as a somewhat irregular visitor in September to the bays of Dublin and Belfast, and is unquestionably most frequent on the eastern coasts of Leinster and Ulster, though by no means confined to them. It occurs much more numerous in certain seasons than in others; thus sixty were killed on Cork Harbour on 29th October, 1847, though there are only two other notices of it from the co. Cork; one, formerly in the Neligan collection, was killed on the Clare side of the Shannon Estuary. This bird occurs on Dublin Bay nearly every autumn, usually singly or in very small numbers, but in the first half of September 1897, a great year for waders, Mr. E. Williams saw a great many Curlew-Sandpipers in the bay; one was shot near the coast of Louth on 3rd November 1837. On Belfast Lough Thompson made notes of this species for above twenty-five years, but he found the number to vary much as they do in Dublin, single birds or small groups being most frequently seen, though on 21st September 1839 not less than a hundred were in company with a large flock of Dunlins. In this case all the Curlew-Sandpipers left the bay the same day, showing that they were on their migration. The Rev. G. Robinson stated that a large number were killed at Portrush in November 1875, and others were killed by Cox at the same place. In Donegal one was shot at Killybegs in 1850, and another beside Lough Kiltorris on 26th December 1892. In Mayo Mr. Warren has occasionally seen this bird on the sands between Bartragh Island and Killala in September and October, but not later in the season, and he says it is easily distinguished by its cry as well as by its white rump. Mr. Sheridan informs me he has shot it in Achill, and the Rev. G. Robinson believed that he had seen one on the shore near Clifden, co. Galway, in July 1844.

Though a shore-bird, the Curlew-Sandpiper was obtained on Kilcolman Bog near Buttevant, in the north of co. Cork, on 29th October 1884, and eight were shot out of a flock on the Dublin Mountains in September 1879; while others have been reported from Lough Erne, Lough Neagh, and the River Bann.

The earliest arrival noted by Thompson was on 25th August and others were met with in different years during the last week in that month. September, chiefly the first half of the month, is the usual time of the bird's occurrence in Ireland, though it has been found repeatedly in October, but there are exceedingly few notices of it in November and December.

Thompson states that four individuals were said to have been killed out of a flock of thirty or forty on the Lagan in spring, but he did not place implicit reliance on the statement.

THE PURPLE SANDPIPER. *Tringa striata*, Linnæus.

Regular visitor to rocky coasts round Ireland, where it is found in limited numbers in autumn, winter, and sometimes until late in May.

Though little observed, the Purple Sandpiper frequents more or less-except in summer-the rugged and precipitous parts of the coast, seeming to prefer those that are wild and exposed, and less frequently visiting the low-lying shores of Leinster, which are chiefly sandy; accordingly it is thus more common along the western side of Ireland. It is found in Kerry, Cork, Waterford, the Saltees off co. Wexford, the promontories and islands of Dublin, Louth, Down, Antrim, Donegal, Sligo, Mayo, and Galway, and is probably more common in the four last-named counties than in any others. It has been once taken on a Wexford lightship (Migration Reports). Thompson states that in co. Antrim specimens were obtained at Portrush from August to December inclusive, and at Cushendall in March. The Purple Sandpiper appears to be most frequently met with in November. There is but one mention of its occurrence in January, and I have only three notes of it in February; while the few spring instances that can be cited increase in March and again in April; at Portrush in particular, a sensible increase in these birds has been noticed in March. In May seventeen records were made at widely distant times and places, some as late as the end of that month; and they show that the coasts of all the provinces are occasionally visited by Purple Sandpipers, which are then in full breeding plumage, before they leave for their summer resorts. These seventeen occurrences in May were thus distributed:- Kerry (1), Cork (2), Wexford (3), Dublin (1), Donegal (5), Mayo (3), Galway (2). In only one case was the date earlier than the 15th of May, and the latest was the 30th, when the birds were in the fullest summer dress, and the ovaries of the

female were found to be fairly advanced. Pairs were seen in several of the instances on islands off Mayo and Donegal, but these did not exhibit the anxiety of breeding birds, and it would be unsafe to conclude from the facts that the species breeds in Ireland. It has not been recorded in June or July.

The Purple Sandpiper frequently occurs singly or in pairs, and so many as ten or fifteen are seldom found together. On the Waterford coast in November I have met with small parties of three and five, which seemed reluctant to leave the dark rocks on which they stood or crouched, for after performing a short circuit over the water they returned to the same rocks, as horse-flies will return to a horse's back after they have been brushed off. On alighting they oscillated their bodies a little, somewhat as a Wagtail does. Mr. H. Blake Knox has known this bird to sit with its head crouched upon the neck as though in a "brown study," even when approached within three yards. He remarks that specimens shot in October have the purple feathers of the back deeply edged with cream colour; while those in winter plumage have a narrow fringe of grey; the white of the abdomen is, he says, often suffused with cream colour or pale pink.

THE KNOT.

Tringa canutus, Linnæus.

Autumn and winter-visitor, chiefly to the East and North coasts, sometimes appearing in large flocks; less frequent in the South and West of Ireland.

The Knot resorts to localities of a special character, estuarine flats of mud and sand, and on some parts of the coast is not met with. Neligan appeared to consider that it was very common in his time (1837) on the Kerry coast near Tralee, and there are notices of it from Samphire Island in the Migration Reports; while Sir R. Payne-Gallwey, who shot much on Tralee Bay and the mouth of the Shannon, speaks of it as a common bird in spring and autumn. On Cork Harbour, however, it is little known, and the same may be said of the Waterford coast, where I can scarcely say that I know it, though I have seen a few Knots which were shot on Dungarvan Bay one hard winter. Poole noticed this species as occasionally visiting Wexford in great numbers, though at other times absent. On the Wicklow coast the Rev. A. Ellison observed many in company with other waders. Cox states that the Knot is abundant on the bays of co. Dublin, and that after the tide has begun to ebb very large flocks may be seen flying about on the North Bull and at Malahide; but Dr. Patten finds this bird rather irregular in its numbers, though common as a rule in autumn and winter on Dublin Bay. Thompson says that it is numerous in the Bay of Drogheda; and reports received by Mr. Barrington from the lighthouse there, accompanied by a specimen, show that it is common in winter. In 1893 the numbers increased during January, and on 8th February there were "some thousands" on the strand near the mouth of the Boyne.

The Knot was a very abundant species twenty years ago on the marine loughs of Belfast, Strangford and Lame, where it has suitable and extensive feeding-grounds. It is known as a regular visitor on Loughs Foyle and Swilly, as Mr. Warren finds it to be on Killala Bay, where it is very abundant on the wet and sandy expanse inside Bartragh Island. Along the west and south coasts of Connaught, however, it is seldom recognized, probably from the wild and rocky character of those districts and the general absence of muddy estuaries. Mr. Sheridan considers it rare at Achill, but Mr. Barrington has received specimens from Slyne Head, killed in October.

Knots have in several instances been obtained inland. I have seen one shot after a storm in December near Doneraile, and another was obtained near Clonmel, another on the O' Conor Don's property in co. Roscommon, and Mr. J. F. Shackleton shot one at Hazlehatch, co. Kildare.

Thompson's earliest records of this bird near Belfast were made in the middle of August, the month when Knots also appear on Dublin Bay, and at that time and in September, when the flocks of young birds become numerous, they are very tame. They soon leave Lough Swilly after their arrival there, but on the Leinster coast they continue without apparent diminution until Christmas, and Thompson states that on Belfast Lough he has known them to be as common in December and January as at any time. A hard frost causes them to move along the coast and visit unusual places, and fresh flocks probably visit this country in such weather. These birds remain until March, by the end of which month few are to be seen. A certain number that were not breeding have been found in April, May, and June on the Moy Estuary by Mr. Warren; these associated with Grey Plovers, Whimbrels, or Godwits, and were in grey plumage, one which he shot in June having even commenced to moult. A pair were, however, seen ill breeding-plumage on 17th August at Portsalon, Lough Swilly, and one of them was obtained (Mr. D. C. Campbell). In a few cases Knots in red plumage have been obtained in August or September in the neighbourhood of Belfast; one of these is in the Museum of that city.

Thompson found the stomachs of all those he examined contained minute univalve shell-fish; he remarked that they fed at night more than by day, and also that, when approached on a dark night with a lantern they ran before it without taking flight. Their evolutions on the wing are swiftly and powerfully executed, resembling those of Dunlins and other waders. Knots have a tendency to return to the same spot, and newly-arrived birds in autumn have done this though fired at four times, flying back after each disturbance, only to be slaughtered.

THE SANDERLING. *Calidris arenaria*, (Linnæus).

Visitor to sandy shores on all sides of Ireland, chiefly in autumn and Spring.

The Sanderling visits Ireland in very much smaller numbers than some other waders, and as it resorts to sands, rather than to mudbanks, it is rather a local bird. Thompson, thought that, on Belfast and Strangford Loughs there were fully two thousand Dunlins to one Saderling, but as those inlets afford but little sand, the locality is unfavourable for the latter, while it is attractive to the former species, from the extents of mud.

The Sanderling is said to be of common occurrence on strands in Kerry, such as those of Ballyheige Bay; and on the Cork and Waterford coasts, though not common, it is observed occasionally in autumn and winter. Larger numbers seem to visit the sandy Wexford shores, and the North Bull, on its seaward side, is a noted resort in Dublin Bay. The Baldoyle and Malahide Estuaries, Drogheda Bay, and Dundrum beach in co. Down are also visited, as well as Strangford and Belfast Loughs, though, as stated above, few of these birds occur on the latter. Excellent observers have failed to notice the Sanderling on Lough Foyle or Lough Swilly, but on Naran and Bundoran strands it is not uncommon in autumn. To the extensive sand-flats of Killala Bay and the mouth of the Moy Mr. Warren finds it a regular visitor, common in autumn, winter and spring, and it is known in Achill as early as August and as late as June. It is said to be common in Connemara (Thompson), and is found on Liscannor Bay, co. Clare. Thus the Sanderling appears to resort more to the west of Ireland than to the south-east or north-east coasts, probably from the occurrence in the west of great accumulations of sand rich in animal life.

This species arrives so early and departs so late that no month in the year is without records of it, and Thompson gives some even for July. Dr. Patten informs me that early in August adults appear on Dublin Bay still in summer plumage, and become plentiful by the middle of that month, when they are changing into their winter garb. Towards the end of August he found old birds had almost disappeared, but the shore was dotted with young ones freshly arrived; and these, which were in small wisps, he observed to remain until about October. The main arrivals are noticed in September, and that appears to be the chief month of the autumn passage, for Sanderlings diminish in numbers during winter. They reappear in May on their spring migration, many being still found in June, having then assumed the nuptial colouring. Such examples have been obtained both on Dublin Bay and on the Mayo coast (Killala Bay and Achill) in the latter month, and in Donegal Mr. Steele Elliott saw about fifty on 27th May, and a smaller flock on the 29th of that month. Dr. Cox contrasted the small parties seen on Dublin Bay in autumn with the large flocks he had observed there on their spring passage.

The Sanderling is not so wary of man's approach as most other shore-birds. Ball noticed its habit of running rapidly to the very base of a great retreating wave, and running back as swiftly before the advance of the next one; while Watters describes the sandy surface near Malahide covered with flocks dispersed over it. Every bird, after standing for a time motionless, would run some ten or twelve yards and stop simultaneously, and then again proceed in concert as if impelled by some mechanical contrivance.

THE RUFF. *Machetes pugnax* (Linnæus).

Rare visitor, occurring chiefly in autumn, very seldom in spring.

Though a decidedly uncommon bird in Ireland the Ruff has been obtained in at least eighteen counties, of which thirteen are maritime and some others lie along the Shannon. The localities of its capture are so distributed in all the provinces as to show that this bird has visited occasionally every quarter of the country, though Dublin and Belfast Bays can show the longest list of records, and there the Ruff is probably an annual

visitor. The only considerable area of the island from which it has not been announced lies in the midlands of Leinster and Ulster.

The following table shows the distribution of sixty-four instances of which the localities are known:-

Kerry.....1	Wexford.....1	Galway.....1	Armagh.....2	
Cork.....3	Wicklow.....3	Roscommon..3	Down	}
Waterford...2	Dublin.....10	Mayo.....3	Antrim.....20	
Clare.....1	Kildare.....4	Sligo..... 2	Londonderry....2	}
Tipperary...1			Donegal.....5	
Munster.....8	Leinster.....18	Connaught...9	Ulster.....29	

In fifty-six cases the months of occurrence were as follows:-

January... -	April.....1	July.....1	October.....9
February..1	May.....1	August.....11	November. .4
March.....1	June.....-	September..24	December...-

There have been other occurrences, in spring as well as in autumn, of which the dates have not been preserved, but the above figures show that the Ruff is chiefly an autumn-visitor from August to November, and that it has occurred far more frequently in September than in any other month. A very few have visited Ireland in spring, but none have been recorded in June nor in the winter months of December and January.

There has been a great preponderance of immature birds among those that have reached Ireland in autumn, but the specimens obtained in spring have been chiefly in breeding-plumage. Single birds or pairs have been met with in most cases, though Thompson mentions small flocks of six or even twelve Ruffs. On one occasion six were taken on the 13th of March in co. Kildare.

Many of the birds obtained in Ireland have been found on boggy ground in inland situations, and some have been observed to stand upon tussocks in the marsh; others have been shot on flooded slob-land with four or five inches of water upon it; others again have been found on the sea-shore. In several cases they were in company with flocks of Lapwings, Redshanks, Dunlins or Knots, but were generally by themselves.

THE BUFF-BREASTED SANDPIPER *Tringites rufescens*
(Vicillot).

Has been twice obtained.

In the Report of the Dublin Natural History Society for 1844-45 it is recorded that a Buff-breasted Sandpiper was presented to the Society by J. Hill, who shot it near the Pigeon House, Dublin Bay; but the date was not mentioned. This specimen passed with the rest of the above Society's collection to the Science and Art Museum, Dublin.

A second was shot at the People's Park, co. Down, near Belfast, about October 1864, by a Mr. Joyce, who, observing two birds fly from the direction of the bay, first shot the above and then its companion, which he did not preserve, as it was blown to pieces (*Zool.*, 1866, p. 389 and p. 457). The bird that was preserved was immature, and is now in the Belfast Museum.

It may be observed that this American Sandpiper occurred in both cases on the eastern side of Ireland, but at localities near two large towns, where it was more likely to be noticed and shot. In the west such a bird might more easily escape observation.

BARTRAM'S SANDPIPER. *Bartramia longicauda* (Bechstein).

Has been twice obtained, in autumn.

Unlike the last species, Bartram's Sandpiper is found to have occurred in parts of Ireland not very remote from the western shores.

The first specimen was obtained by Mr. Joseph Dunn, a Dublin game-dealer, among other wildfowl sent him from Balliasloe in the autumn of 1855, and was probably obtained in the valley of the Shannon, or in that of

its tributary the Suck, on which Ballinasloe is situated. This bird was examined by A. G. More. The second, apparently an adult, was shot in a rushy field at Newcestown, near Bandon, co. Cork, on 4th September 1894, and is now in the collection of Mr. R. M. Barrington.

THE COMMON SANDPIPER, *Totanus hypoleucus* (Linnæus)

Common summer-visitor, breeding in almost every county.

During the breeding season the Common Sandpiper is widely spread in Ireland, inhabiting not only the lower mountain loughs and rocky streams, but the lakes and rivers of low-lying inland counties and nesting on marine islands, such as Achill and Rathlin, I have nowhere seen it more common than along the inland reaches of the Shannon, across whose gliding flood the Sandpiper starts on the wing at every turn, uttering its piercing notes; while from Kerry to Antrim it may be found on lakes of all sizes, though more especially on the shores of the larger sheets of water, such as Loughs Derg, Corrib, Erne, and Neagh. It is scarcer in the counties of Waterford, Kilkenny, Carlow, and Wexford, where it is chiefly known on migration and breeds in but few places; corresponding in this feature of its distribution to its scarcity in the south-east of England.

The Common Sandpiper usually appears in various parts of Ireland from 14th April to the beginning of May, though I have observed it on 12th April on the River Suir above Waterford, and Mr. E. Williams noticed one on 3rd March (*Field*, 13th April 1872), Mr. Barrington has received specimens, chiefly early in May, from various light-stations between Mine Head, in co. Waterford, and Rockabill, off Dublin, most of them having been taken on the Wexford coast. In July and August the young broods with their parents frequent the muddy tidal rivers even in the south-east, and they there form into small flocks, occasionally amounting to twenty or thirty, which, however, do not consort with other waders. I have also shot them in August on the cliffs of Ardmore Head, and Thompson mentions different parts of the rocky coast, as well as the inner part of Belfast Lough, where he saw these birds in July. He remarks that before leaving the country they frequent the sea-shore, though they betake themselves directly to their inland haunts when they arrive in spring. They are seldom seen late in autumn, though there are records of occurrences in November, December, and even in January, which have been well attested; for example, a specimen shot on the coast of Cork on 15th January was sent to Mr. Harting for inspection (*Zool.*, 1884, p. 115).

The Sandpiper sometimes lays very soon after its arrival, for Mr. Parker has twice found complete sets of eggs on 2nd May on Lough Derg, but I have often seen eggs during the first half of June. The nest is usually placed in coarse grass, occasionally under trees in a depression in deep moss or, among dead twigs, beech leaves, and rubbish. On an island where several pairs of Lesser Black-backed Gulls were breeding a Sandpiper cleverly placed her nest deep down between two large stones, where her marauding neighbours could not easily reach her. Another nest was three feet up the trunk of an old sycamore in a hollow formed by its uneven growth, and Thompson describes the breeding of a pair of these birds in a gooseberry bush. I have seen white and pallid eggs, which are more beautiful than similar colourless eggs of Woodcock and Snipe, having a greater gloss. In the breeding-time the Sandpiper may sometimes be seen fluttering or hovering at a considerable height, now and then making a stoop obliquely towards the ground while it utters a trill. This bird will fly in excitement towards a dog when it approaches her young, and an adult has been seen to alight bearing a little one on her back. This species cannot only dive when wounded, but will swim for some distance under water using its wings as well as its feet (Mr. H. Blake Knox, in *Zool.*, p. 8195 [1862]).

THE SPOTTED SANDPIPER. *Totanus macularius* (Linnæus)

Has been once obtained in Ireland.

In the Bulletin of the British Ornithologists' Union, No. LX., it is stated that at their meeting on the 15th of February 1899 "Mr. F. Curtis exhibited a specimen of the Spotted Sandpiper, which had been shot on the 2nd of February, at Finnea, co. Longford, by Mr. Frank Roberts. The bird, which proved to be a female, was very tame, and was feeding at the time in a meadow much trodden by cattle by the side of the River Finnea, within a short distance of the village."

The village of Finnea is in Westmeath, on the borders of Longford and Cavan, and the river on which it is situated is the Inny, which flows out of the neighbouring Lough Sheelin. The locahty is in the midlands and the season of the year is an unusual one for migrants.

This instance sets at rest the question of the occurrence of the, Spotted Sandpiper in the British Islands, which had been previously much discussed, and it adds another species to the American *Limicola* that have been obtained in Ireland.

THE WOOD-SANDPIPER. *Totanus glareola* (J. F. Gmelin).

Has been obtained four times in Ireland, in August and September.

The first well authenticated Wood-Sandpiper obtained in this country was shot on Calary Bog, near the Sugar-loaf Mountain, co. Wicklow, by Mr. Smith Cregan on 23rd August 1885. It was alone, and when it got up the flight reminded him of that of a Snipe. This specimen was presented by the Rev. Dr. Benson to the Dublin Museum.

On the same bog Dr. E. Blake Knox met with three birds on 1st August 1896, and shot one; and again on the 3rd August he shot another, both proving to be Wood-Sandpipers. A third occurrence took place in co. Mayo, on 5th September 1898, when Mr. William Drury shot a bird of this species while it was feeding on a piece of Hooded grass-land in the middle of a shallow lake two miles from Lough Cullin. This specimen was exhibited by Mr. Howard Saunders before the British Ornithologists' Club on 16th November 1898. Another Wood-Sandpiper was shot when alone on a marsh near Tramore Bay, co. Waterford, on 25th August 1899, by Mr. J.F. Knox. Owing to the heat of the weather this specimen was not in a state to be mounted when it reached Dublin, but it was identified by Mr. E. Williams (*Irish Nat.*, 1899, p. 231)

THE GREEN SANDPIPER. *Totanus ochropus* (Linnreus).

Rare visitor, from August to February inclusive.

The Green Sandpiper has been obtained in at least twenty counties, the majority of which are maritime; but less frequently on the western side of Ireland than elsewhere. It usually occurs singly or in couples, but I have shot three together on the Cappagh Lake, and though the bird is decidedly uncommon I have obtained it in co. Waterford on three occasions at long intervals; while other persons have also met with it repeatedly. It is probably an autumn-visitor which remains through the winter but leaves before spring, as there appear to be no records of it from March to July inclusive.

Records of sixty-nine instances which are available show the following distribution: -

Kerry.....2	Wexford.....1	Galway.....2	Down.....3
Cork.....4	Carlow.....2	Sligo.....5	Antrim.....6
Waterford...7	Dublin.....11		Tyrone.....1
Clare.....1	Kildare.....5		Donegal.....3
Limerick....2	Queen's Co...1		
Tipperary...4	Louth.....1		
	Meath.....6		
	Westmeath...2		

Munster.....20	Leinster.....29	Connaught...7	Ulster.....13
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Fifty-three occurrences took place in the following months:-

January.....11	April.....-	July.....-	October.....7
February....6	May.....-	August.....10	November... 7
March.....-	June.....-	September... 8	December...4

The Green Sandpiper does not remain on the coast, but resorts to rivers, lakes, and pools, often near trees, and when it visits a locality may be seen there for weeks and even for months together, as Mr. Longfield has observed near the Bandon River. Mr. E. Williams having procured one of these birds in full summer plumage on the Dodder in August 1889, met with another at the same place on 15th December, and he observed it there repeatedly until the middle of February, when it disappeared. He also had one under observation from September until December 1893. It used to wade into the water without any apparent reason, and when it got beyond its depth would swim like a Water-hen to a shallower spot. It was also fond of standing motionless for a long time and would then suddenly waken up and begin to feed.

The cry, when heard at a distance, sounds like a person blowing on a piped key. When flushed, Green Sandpipers go off with a zig-zag flight as a Snipe does; but though they may fly a long way, even out of sight, they will often return to alight on the same place. Birds of this species have been obtained in three different years on the same little pond at Moyview, co. Sligo, as recorded by Mr. Warren.

THE COMMON REDSHANK, *Totanus calidris* (Linnæus)

Resident, breeds in most Irish counties, and becomes very numerous on the coasts in autumn and winter.

The Redshank is one of those waders most commonly found breeding on marshes, lakes, and rivers in Ireland, and though less numerous in the nesting-season than the Common Sandpiper, it is absent at that time from a very few counties only, and these lie chiefly in the south-east. In Munster generally it breeds far less than in the other provinces, and a similar remark may be made of western Galway and Mayo, beyond the great chain of lakes. The bird is common from April until July in the wetter parts of the midlands, on islands in the lakes, the callows along the Shannon, and on some marshes near tidal water.

In July Redshanks begin to remove from these haunts, and towards the end of that month some arrive on the estuaries, while during August they are noticed more commonly on the coast. September and October bring a great influx of these birds, which are most abundant in those months, but they continue to frequent the shores of Ireland, and especially the tidal mud-banks, through the winter and until April. So numerous are they that a hundred and upwards have been repeatedly killed by one discharge of a punt gun, and it has been remarked by Thompson that they are more common on the shores of this country than on those of Great Britain. Though inland localities are generally forsaken during the winter months, occasional individuals and even small flocks have been found there at that time of year, as in the frost of January 1892, when Colonel Malone saw nine together on Lough Iron.

The Migration Reports contain scattered notices of Redshanks from isolated stations in every month of the year, and these birds appear to resort to remote islands of the west and north coasts in an irregular manner at all seasons. This is the case to some extent on the shores of the mainland also, for as Thompson states, "little flocks as well as single birds and pairs occur on the coast in the height of summer, though in the breeding-season not more than one will be met with for a hundred at other times about our shores." Such birds are evidently not breeding and are probably but one year old.

For a ground-breeding bird the Redshank lays early, about the middle of April and sometimes a little sooner, though eggs may be taken in May and even in June. Its favourite resorts at that season are grassy or rushy islands in those lakes which afford good feeding-grounds; lakes with stony bottoms and shores being seldom frequented; while quiet marshes, whether in the heart of the country or adjoining marine inlets, like Loughs Foyle and Swilly, are used as breeding-places. Many Redshanks nest in favourite spots, among which I may specially mention the preserved marshes at Granston, in Queen's County, those beside Lough Iron, in Westmeath, and the wet meadow-lands along the Shannon. When the intruder approaches their resorts, the crowd of these birds driven to take wing keep up a continuous piping. At such places one of these birds may frequently be seen to launch itself upwards from the ground with rapidly vibrating wings, and then, holding its extended wings rigid with a downward slant, the bird descends slowly to the ground like a parachute, much in the same way as a Curlew or Dunlin acts in the nesting-season. The Redshank will alight on a bush, rail, or top of a ruined castle, to command a view of an intruder, all the while uttering its excited alarm-cry, which has given it the name of "Tu hu" in the north of Ireland. It will also chase a Heron from its home.

The nest is lined with dried grass and is comfortably sunk among rushes or coarse grass, sometimes in the centre of the tuft, and sometimes beside it; but I have found eggs on a small island where the herbage was not long enough to conceal them. Thompson's statements as to Redshanks laying on gravelly or shingly beaches

like the Ringed Plover seem to have been derived from the mistakes of boatmen. In a favourite spot where several species were breeding, Mr. Wal'ren has found a nest of this bird among heather not three yards from that of a Teal and from another nest of a Lapwing.

Mr. Campbell relates how he and two friends were searching a breeding-haunt for nests of Redshanks, which were dashing about excitedly on the wing, when a bird was observed running across the ground the party had left. It was then found that she was leading a little nestling back to that part of the marsh that had been quitted by the searchers (Irish Nat., 1894, p. 188).

THE SPOTTED REDSHANK. *Totanus fuscus* (Linnæus).
(By ROBERT WARREN.)

Very rare visitor, chiefly from August to November and December; it has, however, occurred twice in January, once in February, and once in April.

The Spotted Redshank is not known to have been obtained in Ireland on more than eight occasions, yet there is good evidence of its more frequent visits to our shores, chiefly during the autumnal migration. Including these, the total number of its occurrences will amount to twenty-six, and in some of these instances the bird has frequented the same locality for weeks or even months together. These occurrences were as follows:- In co. Cork, one; Dublin, six; Kildare, one; Sligo, seven; Mayo, ten; Down, one. Those in Mayo and Sligo rook place on the Moy Estuary, Killala Bay, and all of them came under my personal observation. The fondness of this bird for the coasts and tidal estuaries should be noticed, there being only two instances from inland localities.

Cork. - An immature female, in company with Common Redshanks, was shot near Foaty, on a branch of Cork Harbour, on 26th December 1898 (Mr. W. B. Barrington).

Dublin. - One shot in the mill-race, Boherabreena, an inland locality, in the winter of 1851, by Dr. J. R. Kinahan (Proc. D. U. Zool. Assoc., 25th November 1854). This may be the specimen in Trinity College Museum, which, like other specimens of that period, is without data. As Kinahan was a member of the Association, and a College official, he probably presented it to the College Museum. Two observed at the North Bull, September 1888, by Mr. Edward Williams. One, shot among a flock of Common Redshanks at the North Bull, in August 1890, by Mr. A. Rohu, and now in the Science and Art Museum, Dublin. A bird of the year, shot by Mr. E. Williams on the Baldoyle Estuary, 24th September 1891, and now in his own collection. One observed at the same place on 3rd October 1892 by Mr. E. Williams. One observed at the North Bull, 7th September 1894, by Mr. E. Williams and Dr. Fatten.

Kildare. - One, an immature bird, shot near Sallins, and received 27th September 1886 by

Messrs. Williams & Son, now in the Dublin Museum.

Mayo and Sligo. - One shot on 14th January 1867 by myself, now in the Queen's College Museum, Cork. One shot on 30th October 1876, near Rosserk Abbey, by myself, and still in my possession. Fifteen others have been observed by me from time to time in different parts of the estuary of the Moy and adjacent channels, the dates being as follows: - Late in December 1868; 13th September 1869; 15th November 1871; 27th October 1874; 23rd April 1875; 4th September and 13th October 1876; 3rd November 1877, and several days after; 22nd September 1878; 14th March 1882; 14th November 1883; 8th October and 13th November 1884; 19th February 1885; 3rd October and 25th November 1886; 18th September and 9th October and 27th December 1887; 20th October 1888. Since the latter date none have come under my notice, though shooting regularly every season with my punt-gun in the Moy Estuary.

Down. - The first recorded Irish specimen, shot by the late Wm. Thompson, on 22nd August 1823, at Holywood, Belfast Bay ("Natural History of Ireland," Vol. II., p. 200).

In their habits, the birds that have come under my observation resemble the common species, frequenting the same feeding-haunts along the shores, and associating with them both when feeding and resting. In consequence of this companionship the Spotted Red-shank passes unnoticed, unless attention is attracted by the peculiar call-note, so unlike that of any of our other waders. Its extreme wildness, too, in nearly every instance prevents its being recognized until its cry betrays its presence, by which time it has got out of range; and on such occasions its strong and lofty flight has surprised me, for it generally rose like a wild Snipe, soaring

to a great height, and going right-off out of sight. The peculiar call-note is a double one, and can only be imitated by whistling, for it is impossible to describe it in writing so as to be recognized. It has also a loud harsh cry when alarmed, and this also is, in my opinion, indescribable. When seen in flight, the dark wings offer a striking contrast to the white barred ones of the common species. Other aids to identification are the long, slender, red legs and long bill, and a peculiar dark streak between its bill and eye.

THE GREENSHANK. *Totanus canescens* (J. F. Gmelin).
(By ROBERT WARREN.)

A regular winter-visitor in small numbers, generally distributed round the coast, wherever there are suitable feeding-grounds, but not known to breed in Ireland.

To most of the bays and estuaries of Ireland, from north to south, this fine Sandpiper is a regular visitor; and it is found throughout the year, except for the short period it is absent at its breeding-haunts. It seldom wanders inland, though occasionally met with by lakes and rivers. Mr. R. J. Ussher has shot it at his lake at Cappagh, co. Waterford; Mr. Young, of Brockley Park, Queen's County, mentions that it occasionally occurs in winter on the River Barrow in his district; and Mr. A. Parker has a specimen shot at Castle Lough on the Tipperary side of Lough Derg. In the south of Ireland, especially about Cork Harbour, the Green-shank is common, but nowhere numerous; little groups of three to five birds may be seen feeding about the bays and estuaries of that fine harbour. The bays between Monkstown and Ringaskiddy, Currabinny, and Loughbeg, and the estuary of the Carrigaline River near Coolmore, are favourite haunts. In the west of Ireland, the estuary of the Moy, between the counties of Mayo and Sligo, is a favourite feeding-ground of Greenshanks, and there they may be met the entire season, scattered about the shores, feeding in little flocks at low tide, then, when the tide rises and covers the feeding-grounds, they collect together to rest on the shore of some island until the ebbing tide leaves the sands again exposed. In the loughs and bays of the north of Ireland their habits are similar. Dr. Parke, of Newtownards, says "that at Strangford Lough, co. Down the Greenshanks are with us all the year round" (except when at their breeding-haunts), "but are not at all plenty, only an odd bird or two now and then." In Lough Swilly, Professor Leebody and Mr. D. C. Campbell's experiences are somewhat similar.

The Greenshank is the earliest of our waders to return from its breeding-haunts, sometimes appearing before the end of June, when I have shot both adults and young. In 1878 they returned earlier than usual, for on the 19th of June I met a flock of fourteen on the Island of Baunros, and shortly after among the islands near Rosserk Abbey, in company with about seventy Redshanks. On the 29th I met them again, when their numbers had increased to twenty, while the ranks of the Redshanks had risen to nearly two hundred birds. When the Greenshanks returned from their breeding-grounds the flocks keep together for some weeks, or longer, but afterwards separate, to settle down for the season, and scatter round the shores in little groups of two to five, sometimes only a solitary bird being seen. This habit of separating into small flocks may have given rise to the idea that on some parts of the coast Greenshanks are only seen in autumn and early winter, and later on become scarcer, or disappear altogether. The fact is that the birds are feeding in retired creeks and inlets, especially where streams of fresh water run down from the land, and thus escape the notice of the casual observer, who may walk for miles along a harbour or estuary without seeing a bird.

On the 1st of September 1881 I witnessed a most interesting flight of a Peregrine at a Greenshank, and was surprised at the swimming and diving powers exhibited in escaping. The latter bird was crossing the channel from Rosserk to the Moyview shore when pursued by the Falcon, and, uttering the most piteous cries at each stoop of the Hawk, it dropped into the water, diving to escape the terrible clutch, and then, when the Peregrine soared upwards from the stoop, it rose from the water and continued its flight to the shore. Three times the Falcon put the Greenshank to the water, but after the last dive it reached the shore and hid among the seaweed, while the Peregrine waited on, hovering over the place of concealment until I ran down and scared the latter off.

THE RED-BREASTED SNIPE. *Macrorhamphus griseus*
(J. F. Gmelin).

Has been twice obtained, in the same autumn and in adjoining inland counties.

The first Irish-taken specimen of this American species was received in Dublin on 29th September 1893, with a lot of Snipe sent from Maryborough, Queen's County. Mr. E. Williams, who obtained it, stated that it was an immature female in autumn plumage (*Irish Nat.*, 1893, p. 302), and it is now in the Science and Art Museum, Dublin.

A second specimen, which proved to be an adult female, was received on 11th October in the same year, 1893, with a bundle of Snipe from co. Tipperary by Mr. F. Coburn, taxidermist, Birmingham, and was sent to Professor Newton, who noticed that the measurements corresponded rather with the western than with the eastern form (Barrett-Hamilton, in *Irish Nat.*, 1893, p. 323).

THE BAR-TAILED GODWIT. *Limosa lapponica* (Linnæus).
(By ROBERT WARREN.)

A regular winter-visitor, common, and numerous in some of the larger bays and estuaries of the East and West coasts, but scarcer in those of the North and South; a few occasionally remaining all through the summer.

The Bar-tailed Godwit appears to be regularly distributed round the coast of Ireland, among the bays and estuaries where there are extensive tracts of sand and mudbanks.

In the south of Ireland it is common in Cork Harbour, remaining all the winter; while in the other bays and estuaries south-west of Cork Harbour it is much scarcer, for, according to Captain A. Morgan, of Bunalun, Skibbereen, "during an experience of forty years punt-gun shooting on that part of the coast he has never seen any large flocks, only little parties of five or six birds together."

In Dublin Bay, on the east coast, the late Dr. Cox states, in *Zoologist* for 1879, p. 478: "Bar-tailed Godwits common; a few may be seen in August, after this they increase each month till November, when hundreds may be seen along the coast. In mid-winter the flocks are larger along the shores of Sutton, Dollymount, and Clontarf. In severe winters fewer remain, hard weather driving them further south. In early spring there are always fresh arrivals in small flocks; these have nearly all disappeared by the end of April." In 1899 birds remained on the North Bull, Dublin Bay, as late as 7th of June (Dr. Patten, in *Irish Naturalist*, 1899, p. 256).

In Mayo, on the west coast, Mr. J. R. Sheridan states "that large flocks spend the winter in the vicinity of Innisbiggle, a large island east of Achill, and between Ballycroy and Achill." On the Moy Estuary and KiUala Bay these birds are very numerous. They begin to arrive in August, and continue coming all through September and October; by the end of the last-named month they may be seen in very large numbers on the sands; their favourite haunt being on the western side of the estuary, between Moyne Abbey and Bartragh. Flocks from one hundred to five hundred birds are seen, but one to two hundred would be about the average. They remain all the winter, and severe weather does not appear to affect them. In March small flocks begin to arrive, followed by others in April and the beginning of May; but they only remain for a short time on their way to the breeding-places, and by the end of the month the greater part have left, though some linger on through June and July, and even into August.

In the north of Ireland, according to Thompson, although numerous at the time of autumnal migration, they move on, only a few remaining during the winter. This is corroborated by Mr. D. C. Campbell, of Londonderry, who says of Lough Swilly: "The Bar-tailed Godwit is fairly common in early winter; a few remain till spring, when their numbers are largely increased." In Lough Foyle, he says, "Small flocks of six or seven birds are seen in winter, and occasionally shot by punt-gunners." Professor Leebody, of Londonderry, also considers them scarce in winter about Inch, on Lough Swilly.

It is strange that amongst the hundreds of birds seen in spring on their way to the north the red-breasted bird in nuptial plumage is seldom observed; in fact so very seldom that I have recorded the few I have met. The first I ever saw was on the 10th of June 1852, when a pair were among a flock of fifty pale coloured birds. On the 2nd of June 1866 I saw a pair in full breeding plumage among a large flock of light coloured birds and Knots, and on the 2nd of August 1878 three red-breasted birds were observed among fifty others in the light grey of winter. A remarkable fact connected with these birds is that after the greater part have left for their nesting-haunts, some birds, probably too young to breed, remain throughout the summer about the estuary,

without assuming the nuptial plumage. During the months of March and April 1878 Godwits were scarcer than usual, little flocks of only twenty to thirty being met with, although previously very numerous during the winter. However, considerable additions were made to their numbers early in May, and after the greater part of them had left for the north a good many remained through June and July, and into August. On June 12th I observed twenty birds, all in the grey plumage, near this place; and on the 19th, wishing to ascertain whether the birds still remained, I went down the river in my punt to a favourite haunt near Bartragh, where I met with a flock of rather more than a hundred and twenty, and, after looking at them for a long time through my glass, I was able to distinguish only a solitary individual in the red plumage, all the rest showing the grey backs and white underparts of winter. Ten days after, *i.e.*, the 29th of June, I went down again, and saw about the same number of birds, and although I carefully examined them through my glass I was unable to make out a red-breasted bird amongst them. While watching the Godwits I was surprised at seeing twenty Knots, and these were also in the grey plumage; so, wishing to examine some specimens, I shot two Godwits and a Knot, none of which showed any trace of summer-plumage, while the Knot and one of the Godwits had even begun the autumnal moult, the young sprouting feathers being of a light grey colour. When returning, I saw among a small flock of the Bar-tailed Godwits a pair of the Black-tailed species in full summer-plumage, with their chestnut-coloured breasts shining in the sunlight. I was unable to look after these again until the 2nd of August, when I found at the same place about fifty Bar-tailed Godwits, three of which showed red breasts, though much paler in colour than the breasts of the Black-tailed seen previously. This flock was evidently part of that seen on the 29th of June, their excessive wariness proving almost conclusively that they were not birds lately returned from the breeding-haunts; for the latter, both old and young, are much tamer and more easily approached than those that have remained about the shores throughout the season.

NOTE from *Irish Naturalist* (August, 1899, p. 187). - An unusually large number of Bar-tailed Godwits have remained about the sands of the bay and estuary this summer. When returning in my boat from Bartragh on the 5th of July, I observed about a hundred birds on the shore of Baunros. On the 13th of June, on the sands near Moyne Abbey, I saw several flocks, numbering fully 150 birds altogether, and among one small group I observed a bird in the red plumage of summer, a very unusual sight in this district; for the birds in this garb do not pass along this coast to their breeding haunts as they do on the east coast of England; the birds, with few exceptions, that frequent this coast being apparently immature-too young for reproduction.

ROBERT WARREN.

THE BLACK-TAILED GODWIT.

Limosa belgica

(J. F. Gmelin).

Occasional visitant, chiefly in August and the autumn months.

From its repeated occurrences on Belfast Lough, Thompson considered the Black-tailed Godwit an annual visitor to Ireland in autumn; but though it has been recorded in a great many instances, and occasionally in small flocks, it is still a scarce and uncertain bird, much rarer than the Bar-tailed Godwit. As in the case of other irregular visitors, it has been obtained in several parts of the country in some seasons, while other years are without any record of it. Leinster is the province most frequently visited, then Munster, after that Ulster and Connaught; while, of sixty-two cases available for reference, fifty-two occurred in fourteen maritime counties and ten in six inland counties.

August and September are the months in which Black-tailed Godwits chiefly find their way to Ireland, and through the autumn months, including November, observations have been more frequent than at any other season. In winter these birds are very rare, and there is no record for February. A very few have been obtained, chiefly inland, in spring; one in June, on the Moy; and a pair in Longford in July. Another pair were shot on a small lake near Clonmacnoise on the Shannon, by Mr. A. Grant in August. Birds in summer-plumage have been seen or obtained on the Moy Estuary in May and June (Mr. Warren).

Fifty-three instances, in some of which more than one bird is included, took place in the following months:-

January.....2	April.....3	July.....1	October.....4
February.....-	May.....3	August.....13	November.....7
March.....2	June.....1	September. 16	December.....1

THE COMMON CURLEW. *Numenius arquata* (Linnæus).

Resident and numerous. Breeds more or less in all the provinces, and is abundant in autumn and winter on the coasts, where some remain through the summer.

The Curlew breeds extensively in Ireland, chiefly on the great flat bogs, also on the mountain ranges, but in Munster it has fewer summer resorts than elsewhere. In that province a few nest on the upland moors of Kerry, Cork, Clare and Limerick, and many do so on the bogs of the great central plain, which includes most of Tipperary and the greater part of the Leinster counties. On the Dublin and Wicklow mountains Curlews also breed, as well as on bogs and mountains in many parts of Ulster and Connaught. During the summer a variable number of non-breeding birds, occasionally in flocks, frequent the coasts and islands, and I have seen a small flock on Lough Neagh in June while late in that month and early in July great numbers have been seen from Dungarvan lighthouse, flying westward (Migration Reports).

The resident birds with their young come down to the estuaries in July, and in September there is an extensive transmarine immigration. Through autumn this species appears in the largest numbers on the shores and tidal rivers, where the birds usually continue, until in spring the residents betake themselves to their inland resorts and the winter-visitors depart. During winter many are also found on the lakes and rivers of inland counties, and in severe frost Curlews disperse themselves over the country; but when the fields are frozen hard for any considerable time numbers perish.

In March a great northward migration has been observed at Limerick and up the Shannon Valley, as well as over the cities of Waterford, Dublin, Belfast and Londonderry in several country towns too, as Skibbereen and Charleville in the south, and Omagh in the north of Ireland, a similar movement has been noticed in March or April. This has been heard going on for hours during dark nights, when the lights in the towns induce the birds to lower their usually lofty flight on migration. The loud, piercing cries of flocks of Curlews attract the attention of many on such occasions, and are recorded as phenomenal. Thus the routes followed do not appear to be confined to the coast-lines, and the great numbers migrating in a northerly direction over Londonderry for instance indicate a departure from this country, probably to Scotland or Northern Europe. This is corroborated by entries in the Migration Reports from the Maidens (light-houses off co. Antrim), where Curlews are often observed in March and April passing to the north and north-east, and in those months the movement is noticeable all round Ireland.

From the above it may be remarked that the spring migration of the Curlew is oftener observed than that of any other bird.

The outlying islands of the north and west coasts are visited, or used as resorts, through the year; and Rathlin O'Birne seems to be a regular roosting-place, which is quitted during the day for the mainland of Donegal. The occurrence of Curlews on such precipitous rocks as the Tearaght and the Skelligs, and the frequency with which the species is noticed at lightships, show what an habitual wanderer it is; and three individuals have been seen flying away from the direction of land about twenty miles off the south-west coast.

Thompson has given a pleasing description of the Curlews which frequent the mud-banks of Belfast Lough, and, as the tide covers their feeding-grounds, regularly fly off in V formation to isolated rocks outside the bay, where they await the retreat of the waters; while the same thing has been noticed by Mr. Palmer in Achill Sound, where a small flat island is completely covered with Curlews at high water. This is indeed a common habit of waders, but the Curlew confines itself less than other shore-birds to a diet of marine organisms; and often feeds in the fields, where it is quick to discover a spot abounding in insects. Thus lands five hundred feet above the sea in co. Cavan have been visited by large numbers for the sake of the little grubs which were plentiful at the time under the cow-duug (Mr. J. A. Faris).

Though Curlews do not breed in colonies, many pairs may be found inhabiting the same bog, in the grassy or rushy parts of which they love to nest, like the bog of Menlough south of Lough Corrib; but numbers are scattered over the vast expanses of heather, such as those along the lonely reaches of the Shannon between Loughs Derg and Ree, and the extensive red bogs of King's and Queen's Counties, Westmeath, Longford and Roscommon. I have also seen them nesting on a great floe-bog on the Antrim mountains near a colony of Lesser Black-backed Gulls.

As one walks over their summer haunts these birds come flying towards the object of their alarm with a quivering whistle which is not a mere warning-note; it is freely uttered throughout their breeding-grounds, where the Curlew, like the Redshank, may be seen flying up with rapid strokes, and having attained a certain elevation, projects itself on outstretched wings until it descends like a parachute to the ground.

The eggs are laid in the latter part of April or during May, a set that I saw having been taken on the Antrim mountains on the 26th of the latter month. The locality was probably one of the latest in Ireland.

I have notes of six albino or white and buff specimens obtained on different occasions; one of these is in the Dublin Museum, and another, which was shot on the Barrow, is at Brockley Park.

THE WHIMBREL. *Numenius phaeopus* (Linnrens).

Common visitor on migration; abundant in spring, but much less numerous in autumn.

The Whimbrel, as Thompson remarks, is the only bird in this order which is of regular double passage, and differs from allied species in being more numerous on the spring migration than at any other time.

The Migration Reports show that flocks of Whimbrels arrive late in April and early in May at all our south coast stations, from the Fastnet to Coningbeg, flying northward. This seems to indicate that they reach Ireland from some point further south than those migrants which chiefly strike the Wexford coast on arrival. The inland direction of their flight at that time should be considered in conjunction with the fact that they do not confine themselves to the coasts; though they abound along the latter in May, both on the east and west sides of the island. Whimbrels largely avail themselves on migration of the chain of great lakes that lie between Galway and Killala Bays, as well as of the Shannon Valley, and are commonly observed in May on the lakes and bogs of the adjoining counties and in those of the eastern parts of King's and Queen's Counties.

But though they disperse themselves widely in the Midlands, they also, between April and June, visit the most distant islands of Mayo and Donegal, sometimes lingering there for weeks; and no part of the Irish coast seems to be unvisited by the Whimbrel in its season. The return movement early in autumn is observed both along the East and West, and there is evidence from light-stations in the South-West, which if hereafter corroborated, may throw fresh light on the autumn migration of this species.

The earliest date on which the Whimbrel has been recorded is 1st April, when the bird was met with on Dublin Bay by Cox, but it is rarely seen until the concluding days of that month, at which time, or about the 1st May, it appears all round Ireland, and, as Mr. Warren has observed, it is of all our summer-visitors the most regular in the time of its arrival. It usually disappears early in June, but I have heard the call-notes of Whimbrels over Muckroscs on the night of 27th June. Some birds reappear in July, chiefly in the north of Ireland, where Thompson observed Whimbrels in that month for ten successive years, usually about the middle, but on two occasions early in July. During August they are more frequent, though far from approaching in numbers the flocks seen in May. Some are observed in September, but rarely in October, though records for November are not wanting; and Colonel Irby has stated that this species has occurred on the west coast in winter ("Saunders's Manual of British Birds"). In spring the flocks of Whimbrels keep chiefly by themselves, but in autumn they are found in company with Curlews and with Godwits. They not only feed on the oozy mud-banks, but on rocks and inland fields, and unless associated with Curlews are not so difficult to approach.

There is no record of this bird breeding in Ireland.

THE ESKIMO CURLEW. *Numenius Borealis* (J.R. Forster).

Has been once obtained in Ireland.

A specimen of the Eskimo Curlew, presented to the Dublin Museum by the late Sir Victor Brooke, was obtained at the establishment of a Dublin poulterer in October 1870, where it was seen on the 21st, but remained until the 28th of that month exposed for sale. It was then purchased for sixpence, so that its rarity was not suspected by the seller.

Mr. H. Blake Knox, who mentions some of these circumstances (*Zool. s. s.*, p. 2408 [1870]), remarks that, as no game was then sent from America at the season when this bird was obtained, it was in all probability killed in Ireland; and A. G. More was informed that it was shot in co. Sligo ("List of Irish Birds," p. 26).

The most reasonable conclusion from the above evidence is that the bird was killed in Ireland.

Order GAVIÆ.

Family LARIDÆ.

Sub-family STERNINÆ.

THE BLACK TERN. *Hydrochelidon nigra* (Linnaeus).

Rare and irregular visitor, chiefly in autumn, and in immature plumage.

The Black Tern has been recorded from twelve or thirteen counties, all but two of which are maritime, and has been more frequently obtained on Dublin Bay than in any other locality; but from its occurrence in all the provinces, though in few instances, it can only be considered a straggler to this country.

The distribution of these cases is as follows:- Kerry (3), Cork (7), Waterford (5), Tipperary (1), Dublin (11), Louth (2), Mayo (2), Leitrim (1), Armagh ? (1), Antrim and Down (5), Londonderry (1), Donegal (2). Couples or small flocks are included in a few of the instances, but in the great majority there were single birds.

The months are only stated in twenty-four cases, but these show that the autumn is the chief season of this bird's visits to Ireland, though a few have appeared in May, but none during the first quarter of the year, as the following figures show:-

January.,,-	April.....1	July 1 or more	October.....9
February.,-	May.....4	August.....2	November..1
March.....-	June.....-	September...5	December...1

Of the spring instances one is recorded by Mr. E. Williams (*Zool.*, 1890, p. 275), who on 24th May saw a little flock of eight or ten at the Brittas ponds, on the borders of Dublin and Wicklow, but when he went there a few days afterwards they had disappeared. Besides the cases mentioned above, Mr. C. Longfield observed a Black Tern on the Bandon River, co. Cork, which appeared in spring with a flock of Sand-Martins. There is no notice of the bird's occurrence in June, but Ball informed Thompson that in the month of July for several successive years he had observed a number of Black Terns frequenting a lake at Roxborough, near Middleton, co. Cork. As to the time when this took place, it is only said that it was long before 1834, and this might carry us back to Ban's early days. It is therefore most unsafe, as Watters points out, to conclude from it, with Sir W. Jardine, that this species has bred in Ireland.

Four or five were seen in company, on the estuary of the Moy, by Mr. Warren, on 12th October 1859. He remarked them hawking for flies, in pursuit of which they made very sudden and adroit turns on the wing. He shot a couple which were in the first season's plumage.

Though the great majority that have visited Ireland have been immature birds, adults have also been obtained on several occasions.

Some have frequented the same locality for several successive days, as one which was seen from the 7th to the 14th of August on Lough Melvin; another was obtained on Lough Neagh, and the only other specimen from an inland locality, not near a lake or tidal river, was shot by Mr. Purefoy in co. Tipperary as it was flying over a wood.

The absence of suspicion exhibited by some of the birds has been noticed, and I made a note of this in the case of two that I saw on Ardmore Bay, in September 1858. They kept flying about in such close proximity to the boats as to give me a good opportunity of observing their plumage, which resembled that of the upper figure in Yarrell's woodcut.

Dr. Farran noticed a Black Tern on Clonea Marsh, co. Waterford, which, instead of plunging into the water after its prey like other Terns, alighted with its feet on the surface, and picked up its food there, after the manner of the smaller Gulls (Thompson, III., p. 306).

THE WHITE-WINGED BLACK TERN.

leucoptera (Schinz).

Hydrochelidon

Rare and accidental visitor, on the spring and autumn migrations.

The White-winged Black Tern has been obtained six times in Ireland; namely, four times in different counties of Munster and twice on Dublin Bay. It is not stated that more than one was met with on any of these

occasions. Two of the instances were in May, two in June, and one in October, while the date of the sixth is unknown.

Clare. - One was obtained in the vicinity of Newmarket-on-Fergus, on 25th June 1893, while hawking for flies over a small lake (E. Williams, in *Irish Nat.*, 1893, p.253). It is now in the Dublin Museum.

Limerick. - Another was killed in the adjoining county of Limerick and received by Messrs. Williams & Son for preservation in June 1875 (Field 5th June 1875).

Tipperary - A bird that had frequented the lake at Templemore Abbey for some days was shot thereby the late Sir John Garden on 21st May 1874, and was afterwards presented to Mr. F. Foljambe, of Osberton Hall, Notts.

Waterford. - Another was shot on a small lake near Cappagh on 13th May 1875, by my gamekeeper, Richard Wolfe, and is in the Dublin Museum. This example was obtained shortly before the co. Limerick specimen.

Dublin. - The first recorded in the British Islands was obtained near the mouth of the Liffey, on Dublin Bay, in October 184; the same locality produced another specimen, shot by Massey, which passed into Watters collection, but no date is recorded in connection with it (Thompson, III., p. 307).

THE WHISKERED TERN. *Hydrochelidon hybrida* (Pallas).

Has been once obtained.

The only specimen of the Whiskered Tern identified in Ireland was shot between Ring send and the Pigeon-House Fort, at the mouth of the Liffey, in September 1839, by John Hill (Thompson, in "*Annals of Nat. Hist.*," Vol. XX., p. 170). The bird, which was in adult plumage, passed with the collection of T. W. Warren to the Dublin Museum, where it is still preserved.

A record appeared in the *Zoologist* for 1887, p. 433, of a supposed Gull-billed Tern, *Sterna anglica*, shot in Belfast Lough. This specimen was afterwards examined by Mr. Howard Saunders, and proved to be an immature Arctic Tern (*Zool.*, 1890, p. 270).

THE SANDWICH TERN. *Sterna cantiaea*, J. F. Gmelin. (By ROBERT WARREN.)

Is a regular summer-visitor, chiefly to Killala Bay, co. Mayo, on the west coast.

Up to the summer of 1851 very little was known of this fine Tern in Ireland. Its occurrence in Ireland was first made known by the late Wm. Thompson (Proceedings of the Zoological Society of London for 1833), from a specimen shot on 14th September 1832 in Belfast Bay; next, on 28th July 1838 an adult bird was shot opposite the "Grove," and several others seen in September 1839, as well as during the same month in 1844; while another specimen, shot on the 16th August in the same year on Strangford Lough, was sent to Belfast for preservation. Speaking of its occurrence on the Dublin coast, Thompson mentions a specimen having been shot near Clontarf in October 1831, and in July 1834 two more were obtained near the same place. In September 1837 several were seen near Howth, and one at Dollymount Strand on 11th May 1842. On Ireland's Eye a specimen was shot on 15th June 1850; while from 1842 up to the last-named year individuals were seen every summer in June and July between Portmarnock and Malahide. It was first discovered breeding on the Irish coast by the late Mr. J. J. Watters, of Dublin, on the 17th July 1850, who, when visiting the Rockabill (then a celebrated breeding-haunt of Terns, but long since deserted), found a broken egg on the island, and saw three birds flying about.

The preceding was all that was known of this Tern in Ireland up to 1851, when I had the pleasure of adding something, for on the 7th of April in that year I met this beautiful bird near the Island of Bartragh, Killala Bay. Having previously resided in the south of Ireland the bird was quite unknown to me, and when the attention of my brother and myself was first attracted by its peculiar cry, we were much puzzled, and for a long time we could not make out what bird uttered it or from what direction it proceeded. However, chancing to look upwards, we were just able to perceive some birds soaring and wheeling about at an immense height, and all the time screaming loudly. This wild flight and strange cry, so unlike that of any bird we knew, induced us to watch them until they lowered their flight to the water, then, getting into our boat and shooting a couple, to our great

delight we recognized this Tern, and in such perfect breeding-plumage that the breasts and underparts were suffused with a rosy tinge almost as deep as that of a Roseate Tern. This habit of soaring to such a height as to be almost out of sight, and wheeling in wide circles, screaming and chasing each other, is most frequent early in the season, before the females are sitting, though it may occasionally be witnessed in August and September, but almost invariably on fine, bright days. Although seeing the birds every season, I was unable to find out where they bred until May 1857, when I was told of a small lough at Cloonagh, two miles from Ballina, where small Gulls had nests. On visiting Cloonagh, I saw a small lough of 20 to 30 acres in extent nearly surrounded by bog, having a small wooded island at the end, from which a dense bed of reeds and bullrushes extended far out into the water. A large colony of Black-headed Gulls had nests amongst the reeds and on the tussocks of coarse grass along the margin of the lough while a small party of Sandwich Terns were located on a low, flat mudbank, scarcely above the level of the water. Most of the Terns nests were merely slight depressions in the soil, thinly lined with a few blades of dried grass, and generally contained three eggs each. Although not later than the last week in May, incubation was so far advanced that I had great difficulty in blowing the few eggs I had taken. The succeeding winter and spring were unusually wet, and the water in the lake rose so high as to cover the mud-bank, causing the Terns to shift their quarters three miles off to Rathroeen Lake, which they have continued to frequent ever since. Rathroeen is much larger than Cloonagh, and is also nearly surrounded by bog, having very swampy shores except on the east side, and a large quantity of reeds extending out to a small round island in the middle. This island is about 25 to 30 yards in diameter and has some bushes growing round the outer edge. A very large colony of Black-headed Gulls have nests on the island and amongst the reeds, as well as on the tussocks and bunches of long grass round the lough; while a smaller colony of Sandwich Terns nest together on a bare spot on the island, and many others are scattered round, but all on the island. This lake and adjoining land belonged to the late Sir C. Knox-Gore, who strictly preserved it, not allowing the birds to be disturbed or molested, and having the long grass and reeds removed to give the birds more space for their nests; the result of this protection being that the Sandwich Terns have increased largely in numbers, and Miss Knox-Gore told me that, when visiting the lake in 1886, they counted 150 nests of Sandwich Terns on the island. I am happy to add that the birds are still preserved there.

Their appearance on other parts of the Irish coast from time to time has been mentioned by the late Dr. Harvey and others. Harvey stated "that for a week in October 1852 numbers were observed off Monkstown," Cork Harbour. Mr. H. Blake Knox, in *Zoologist* for 1865, remarks: "On April 15th and 25th saw one off Dublin Bay." Again, in *Zoologist* for 1866, p. 305, he says: "Is to be met with not unfrequently in summer and autumn, and still breeds at one spot on this coast, known to few, if any, but myself." Mr. Howard Saunders, in *Zoologist* for 1867, p. 224, speaking of Strangford Lough, co. Down, says: "Could not learn anything about the breeding of Sandwich Terns about this lough, but observed several of these birds." It may be remembered that there are well-known colonies not more than a hundred miles away, on the coasts of Cumberland and Lancashire.

The late R. J. Montgomery, at a meeting of the Dublin Natural History Society in March 1862, told me that he knew of this bird breeding on a lake in Donegal; and, as partly corroborating this, Colonel Howard Irby informed Mr. R. J. Ussher that he had received an addled egg of this Tern, found on a Donegal lough on 16th August 1893, but on Mr. Ussher visiting the lough in 1896 he could find no trace of Sandwich Terns there, and during his searches round the Donegal coast that year, from Donegal Bay to Aranmore Island, no Sandwich Terns were seen.

Early in April 1894 the Rev. Mr. McClean saw a flock of large Terns in Ballysadare Bay, co. Sligo, and as it was too early for the smaller Terns, those seen were probably the Sandwich. In July 1894, when, in company with Mr. McClean, I visited Ardboline Island, off the Sligo coast (a great haunt of Arctic Terns), I saw two Sandwich Terns flying past our boat, and when returning three more were seen, but I could not say where they bred, for there were none amongst the Arctics on the island. Although this Tern has been met on so many parts of the Irish coast, yet, the only known breeding-haunt at the present date is that at Rathroeen. The earliest of our summer-visitors, the Sandwich Tern, is not affected by cold, for during the unusually severe weather of March 1892 they appeared, on the 27th, when there was four inches of snow on the ground and the thermometer indicated six degrees of frost, and yet they were as lively and noisy as if in May. The dates of their arrival in this locality for some years past are: 1851, 7th April; 1852, 23rd March; 1853, 7th April; 1854, 21st March; 1855, 1st April; 1856, 20th March; 1863, 2nd April; 1864, 16th April; 1866, 11th April; 1867, 15th April; 1868, 18th April; 1870, 15th April; 1872, 30th April; 1874, 30th April; 1875, 15th April; 1876, 4th April; 1877, 29th March; 1878, 2nd April; 1879, 5th April; 1880, 24th March; 1881, 31st March; 1882, 30th March; 1883, 1st April; 1884, 3rd April; 1885, 30th March; 1886, 25th March; 1887, 28th March; 1888, 5th April; 1889, 19th March; 1890, 15th March; 1891, 28th March; 1892, 27th March; 1893, 23rd March; 1894, 27th March; 1895,

30th March; 1896, 3rd April; 1897, 22nd March. 1898, 1st April. The great difference of dates of arrival can be ascribed to several causes which may affect the birds on their first arrival on the coast; for instance, the sand-eels (their chief food) have not come up the estuary, and the Terns in consequence remain fishing in the outer bay, and are therefore not observed inside Bartragh Island, which separates the estuary from the bay. Being such early breeders, the young are seen following their parents about the estuary by the end of June, and in 1876 I saw young birds about on the 23rd of June, quite strong on the wing.

When the pairing season commences, it is amusing to watch the absurd antics of the males trying to attract the attention of the females. At low-water the Terns generally assemble on a sandbank to rest after fishing, and there the males strut about among the females with an absurd air of importance, their heads being thrown back and their wings drooping or almost trailing on the ground. After a time, if there is no response from the females, which generally look on the performance with the greatest unconcern, one of the males goes off for a time and returns with a sand-eel in his bill, after which he again struts about with wings and head in the same position, offering the sand-eel from one to another of the females as he passes along unnoticed, until at last he meets one who accepts his offering, when he sits down beside her to settle their arrangements for the season.

THE ROSEATE TERN.

Sterna dougalli, Montagu.

Rare summer-visitor, formerly breeding in a very few localities.

During the first half of the century this beautiful species bred in considerable numbers at a few spots on the eastern side of this island. Following the description of Thompson, he and his friends appear to have visited Mew Island, one of the Copelands off co. Down, in June on four occasions from 1827 to 1849. Thirty-five Terns of three species, shot on those several expeditions, comprised twenty-one Arctic, six Common, and eight Roseate Terns; the latter forming 23 per cent of the total number obtained. In 1833, though the Terns had greatly diminished since his first visit in 1827, Thompson considered that there were many more of the Roseate in proportion to the others, and out of six killed three were of this species, which seemed chiefly to frequent one part of the island and to be more vociferous than the Common or Arctic Terns. He described the wholesale persecution and slaughter which resulted in the Terns quitting Mew Island in 1850.

A lighthouse has since been built there, and though the once numerous colony has greatly diminished, it still exists. No one, however, seems to have identified the Roseate Tern there since the time of Thompson, though Dr. Fatten states he observed three of these birds in Belfast Lough on 14th August 1890. They flew within a couple of yards of the bow of his boat, and their long-forked tails and black beaks were plainly visible.

The second breeding-colony mentioned by Thompson was Rockabill, a small island off the northern part of co. Dublin; where the Rev. George Robinson saw hundreds of Roseate Terns on 12th July 1844, four of which were shot. In 1850, when Watters visited Rockabill, there were not more than seventy or eighty of these birds about it, the decrease being due to the barbarous shooting of the birds by persons who went there for the purpose when the Terns were breeding, and left the water strewn with them, carrying off all the eggs they could find. No Terns now breed on Rockabill, where a lighthouse stands at present. In September 1865, and in May 1866, Mr. H. Blake Knox found many of this species on the Dublin coast, though the bird had then become rare.

In Thompson's time Roseate Terns were also common on the Wexford coast, Glennon having stated that in one season he had received from thence about fifty specimens; and Walker informed Thompson that he was acquainted with the nest of this species on the sand-banks of that county. Mr. Barrington received a male which was killed by striking Hook lighthouse, co. Wexford on 30th April 1897.

Statements as to the breeding of Roseate Terns in Kerry, on the Aran Islands, and elsewhere, have not been corroborated; and now that the bird has become so scarce, as well as protected by the laws in the breeding-season, there seems to be very little chance of identifying it in Ireland. Mr. Warren saw three Terns with exceptionally long tails and slight bodies on Ardboline Island, co. Sligo, on 19th July 1894, which he thought might be of this species, but though they had sand-eels in their bills to feed their young, they kept far too high to be identified with certainty; the great length of their tails, however, could be seen in contrast to those of other Terns. I have seen a pair of long, slender Terns more than once, which took flight from among colonies of other Terns in Connemara and Donegal, but these were so wild as to escape observation immediately.

Messrs. Williams & Son have never received a specimen to preserve except that belonging to Mr. Barrington, and there is not sufficient evidence to show that the Roseate Tern breeds in Ireland at the present day.

THE COMMON TERN.

Sterna fluviatilis (Naumann).

Summer visitant, numerous but rather local. Breeds both on salt and fresh water.

The Common Tern visits Ireland for the purpose of reproduction, and until its young are able to accompany it upon the wing in autumn, seldom strays further from its breeding-resorts than is necessary to obtain food. It breeds, often in company with Arctic Terns, round the coasts of Ireland, on low islands in unfrequented situations; but this species does not form such large colonies on exposed marine islands as the Arctic Tern does, and is less numerous on the whole than the latter, except on inland lakes. This inferiority in numbers applies to all parts of the coast, but especially to those of Ulster. The Common Tern frequents isolated banks, as well as rocks partly covered with turf, in bays, estuaries and lagoons, also the islands, and occasionally the shores of lakes in the midland, western and northern counties.

In Munster its colonies are few; they are to be found on certain islands on the coast of Kerry and western Cork, and a few pairs nest on the Lushings in the co. Clare portion of Lough Derg. Several hundred pairs of Common and Arctic Terns breed on two islets in Ballyteige Bay, co. Wexford, as well as on islands in the lagoons or lakes near the coast of that county.

The Common Tern used to nest in Thompson's time on beaches in the counties of Wexford and Dublin, but, with the exception of a solitary instance near Malahide in 1890, there is no recent note of its breeding on the eastern shores of Leinster. The next place to which Terns resort is Green Island in Carlingford Lough, and on the islands of Lough Strangford Mr. R. Patterson has found many hundreds of pairs of this and the Arctic Tern (*Irish Nat.*, 1893, pp. 67-72). The Copeland Islands, on which Thompson observed such vast numbers in 1827-1849, are still resorted to, and it is to be hoped that these birds are again increasing, as the Commissioners of Irish Lights have directed the lightkeeper's there to prevent people from taking Terns' eggs. It should be remembered, however, that not more than 17 per cent of the Terns Thompson saw killed on the Copeland Islands were of this species. Mr. Campbell was unable to identify Common Terns among the Arctic on the Skerries, near Portrush, but large numbers breed on an isolated bank in the enclosed part of Lough Swilly, others on Mulroy Bay, and I have found little colonies on lakes near Dunglow, as well as on some of the less exposed marine islands of Donegal. On Bunduff Lake, co. Sligo, we found a colony, and Mr. Warren saw a nest of this bird among those of Arctic Tern on Ardboline Island; while there is a well established breeding-place on a gravelly bank in Killala Bay, and the three species *S. fluviatilis*, *S. macrura* and *S. minuta* are said to breed on Inishkea and Duvillaun. Among the Arctic Terns that were breeding on the islands off the west and south of Connemara I recognized doubtfully but a few of the Common Tern, and only on Inishdalla and Deer Island. Mr. Popham got eggs of this bird on Galway Bay. Among its inland breeding-places I may mention in Leinster the lakes of West Meath, Lough Gowna, Lough Oughter, and Lough Sheelin; in Connaught, Lough Corrib, Lough Mask, Lough Corin, Lough Gara, Lough Key, Lough Allen, Lough Melvin; and in Ulster, Lough Erne (Upper and Lower), Lough Neagh, and Lough Beg.

Mr. Warren's earliest observations of this species on Killala Bay have usually been made during the first part of May, but on three occasions he recognized it on the 29th or 30th of April. The arrival of Terns, including *S. macrura*, at the Copeland Islands has for the last ten years been chronicled there between the 1st and 12th of May. The Terns are said to appear in the morning, having arrived during the night, at first in small numbers, increasing for ten or twelve nights (Migration Reports, 1883, p. 45). The general arrival round the Irish coasts seems to coincide pretty well with the above observations, but there are a few much earlier records; thus "Terns or Sea Swallows" were noticed early in April, at Oyster Island, Sligo Bay, in 1882, 1883 and 1884. These were more probably Sandwich Terns, which Mr. Warren, who lives about twenty-five miles further west, has so frequently noticed in March or early April. The Tern-colony leaves the Copeland Islands in September, or even in August if they have settled early and have not been disturbed. The young and old birds seem to keep together and to follow the shoals of sprats and other fish round the coasts, often lingering into October; and Mr. Barrington has specimens obtained from separate light-houses in that month in different years.

On marine islands eggs are very rarely laid before June, and are chiefly produced during that month; but on inland lakes the Common Tern breeds earlier, and complete clutches may sometimes be found before the end of May. Where grass is abundant on their breeding-islands these birds make their nests in it, and they are seldom anything more than mere depressions. I once found a Tern's eggs occupying a hollow in the centre of a dried cow-dung; cattle were grazing on the island where this occurred, and they do not seem to harm the birds unless the area is very small. Both on marine and inland islands, however, Common Terns often lay in hollows

of rocks or among loose stones and shingle; on Lough Key I found five pairs had eggs with hardly any nests, on large stones at the verge of the vegetable soil round an islet close to Rockingham House; on this and similar islands frequented by Terns bushes grow in the centre. Mr. Warren found several pairs nesting on the ancient circular fort on Garrison Island, Lough Cullin. The interior is almost filled up, and is covered with nettles and grass, nearly level with the walls, which are 12 or 15 feet high. On their broad grass-covered top the Terns had laid, as well as among the grass and rubbish in the centre. Another colony of these birds had laid their eggs in a marshy pasture on the shores of Lough Beg, though cattle and horses were grazing on the land. Elsewhere the nesting-place is a bank of gravel, sand and sandy mud, little above the tidal limit, where Terns and Ringed Plovers breed in company.

On several lakes Common Terns have their nests close to those of Black-headed Gulls, but do not always live amicably with them. I have seen several of the former making repeated swoops towards a Gull that had her nest in the midst of theirs; at last the Gull jumped up, and flew after a Tern with a scolding cry, but the agile little creature was out of reach at once.

Terns will attack vigorously a Skua or Heron if it approaches their colony, and I have seen one of the latter, hotly pursued by them, turn on its ample wings and evade their attacks with cries of terror.

The evolutions of a colony of these birds on the wing afford a marvellous sight. The Rev. Allan Ellison and I were sitting beside Lough Meela, in Donegal, at 8.30 P.M. on the 4th of June. The smooth waters were glowing in the light of the setting sun, while dark spikes of rock and islets studded its surface. Suddenly a flock of vociferous Terns, whose long wings and superior size showed them to be of this species rose from an island where they were breeding and performed astonishing evolutions over the lake. They would dash down to the water, swoop round, and mount up, all the time apparently striving to outdo one another in eager effort, which had no other apparent object than enjoyment.

THE ARTIC TERN

Sterna macrura. Naumann.

Summer-visitant. The most numerous Tern on the coasts of Ireland, breeding also on fresh-water lakes in Connaught.

The Arctic Tern has colonies on all sides of Ireland, and breeds in Kerry, Cork, Wexford and Down, in company with the Common Tern, but exceeds it in numbers on all marine islands. On those of the Donegal and Sligo coasts are several enormous colonies of the Arctic Tern, apparently unmixed with the other species, which seems to retreat from those exposed haunts to lakes near the neighbouring coasts, or to banks in the estuaries. Moreover, Ireland is one of those few countries where Arctic Terns are found breeding extensively on some of the fresh-water lakes.

From the size of its many colonies there can be no doubt that this species on the whole far outnumbers any other Tern in this country. Assemblages seated on rocks can often be seen from a boat sufficiently close to distinguish the small, short Arctic Terns with brilliant red bills; and in flight the greater length of wing in the Common Tern, as well as its more prolonged cry, are characteristics of that species. In a lot of eggs, also, it is not difficult to pick out the smaller and rounder eggs of *S. macrura*; at some places, too, the birds have been shot to settle the question.

In Kerry the Arctic Tern breeds on islands off Tralee Bay, in the Blasket group and on Puffin Island.

In Cork it nests in company with the Common Tern on islands in Bantry Bay and on the Sovereign Islands. In Wexford there is a large colony of both Terns on the Keeraghs in Ballyteige Bay. Rockabill off the co. Dublin, being now deserted by these birds, Terns are known in that county on the spring and autumn passage, and Cox considered that among the birds obtained at those seasons the Common Tern was scarce as compared with this species. In co. Down are many large colonies in which the Arctic outnumbers the Common Tern; on Green Island, Carlingford Lough, on several islands in Strangford Lough, and on Mew Island-one of the Copelands referred to in the last article-so many were shot here in Thompson's various expeditions as to give some grounds for estimating the proportion, which was 60 per cent of Arctic Terns among the three sorts obtained. On the Skerries near Portrush, co. Antrim, only this species has been seen by Messrs. Campbell and Gibson, and there is a colony on Inishtrahull. The largest breeding-place of Terns in Ireland is probably Roaninish, a low rocky island or group about a mile in length off Gweebarra Bay. I saw upon it enormous multitudes of these birds, and a good many Lesser Terns, but none of the Common, the whole island being inhabited by the two former more or less. Then there are Inishbarnog and Inishduff, both rocky islands off Donegal, and Ardboline, another very largely frequented island on the Sligo coast. On the flats of sand and

shingle of Killala Bay, inside Bartragh Island, Mr Warren has found this species breeding in increasing numbers of late years along with Common Terns. There are other breeding-resorts on the islands of Blacksod Bay and in Clew Bay, co. Mayo, also on many of the isles off the Connemara coast, especially the group that terminates in Slyn Head, on Deer Island, the Aran Islands, and various others on the south coast of Connaught. At the town of Galway one may watch from the Claddagh Bridge an eager flock of Arctic Terns hovering within a few yards of the spectators over the River Corrib in quest of their finny prey. These birds breed up Lough Corrib on the rocky islets, on which extensive lake, as well as on Loughs Mask and Carra, this species seems to predominate, or at least to be largely associated with the Common Tern. There is a colony on Lough Melvin, in Leitrim, which seems in part composed of Arctic Terns, but we did not shoot any. On Lough Neagh Dr. Darling found one of these birds, recently killed on an island near the co. Tyrone shore, where many Terns breed, chiefly no doubt of the Common species.

The times of arrival (in May) and of departure (in August or September) from their breeding-grounds on the Copeland Islands have been mentioned in the last article, and Mr. Barrington has had specimens sent him from western islands in October; one of these individuals had been killed by a Peregrine.

This species has been occasionally killed when wandering in inland counties; moreover, a remarkable flight of Arctic Terns were observed on 6th June 1842 at Cork, Limerick, and Clonmel. Their visit to the Shannon extended over two or three weeks in July, and they occurred there in immense profusion, being so unsuspecting as to be knocked down with sticks (Thompson, *ill.*, p. 296).

The chief time of laying is about the middle of June, though it is often commenced early in the month; but the great enemies of these Terns appear to be sheep, which are frequently taken to the islands to feed, and they trample on the eggs, which drives the birds away and thus delays their breeding. However, the latter escape this misery when they select, as they often do, a tract of low lichen-covered rocks, in the hollows among which they lay their small boldly-marked eggs. They will select a bare and exposed spot to lay on, which is surrounded by the deep blue sea, and the eggs are sometimes placed among the upturned edges of sharp, slaty rock. I have seen a few blossoms of thrift brought to line the hollow, at other times some grass-bents. Two eggs are frequently sat upon. A pair in my collection are pale blue, almost spotless.

It is very pretty to see the males feeding the females which call for the small fish held by their mates; for this prey they often wander miles away.

Arctic Terns sometimes, but seldom, occur on Irish coasts in the immature plumage, which they exhibit when one year old. They have black beaks, and have been mistaken for other species.

THE LITTLE TERN. *Sterna minuta*, Linnæus

Summer-visitant. Breeds locally on the coasts of Leinster, Ulster, and Connaught.

The Little Tern is far less numerous than the Common or the Arctic Tern, and much more local, being seldom seen far away from its breeding colonies. These are in most cases small, though in a few places they number upwards of fifty pairs. I do not know of any in Munster, though birds of this species have been noticed near Ballybunnion, in Kerry, and about Cork Harbour; but several pairs breed on the Keeraghs, and on the mainland of the Wexford and Wicklow coasts there are several colonies. Dublin Bay contains two of their resorts, on one of which fifty or more pairs may be found nesting in favourable seasons. Little Terns have laid on the coasts of Louth and among the islands of Strangford Lough, but it is not until Donegal is reached that they are found in any numbers. Mr. Hart says they frequent the shores of Lough Swilly and there are colonies on the strands of Naran and other places in the west of the county; while on Roaninish I found their eggs in several places. On and near Drnmcliff Bay, in co. Sligo, Mr. Warren met with a considerable colony on a wide expanse of sand which is above the ordinary tidal limits, and at the Inch on Killala Bay he found the number of breeding birds had suddenly increased in 1895 to sixty or seventy pairs, whose nests were dispersed over half a mile of the sands. In western Mayo these birds nest on Inishkea, Duvillaun and Achill, as well as near Roundstone, in Connemara, and on the Aran Islands (Mr. H. Leybourne Popham).

As this is usually a strictly marine species in Ireland I was surprised to see a pair fishing far up the southern section of Lough Corrib, fully eight miles front Galway Bay, on 5th June 1891, and they seemed to be quite at home there, though I failed to find their nesting-place. It is to be observed, however, that Arctic Terns breed extensively on Lough Corrib, and that the Little Tern does so on inland lakes and rivers of continental Europe.

Watters states that thirty of these birds were seen on the Wicklow coast as early as the 26th of April, but Mr. Warren has usually noticed them during the first or second week in May. Eggs are seldom laid before June in

most localities, but Dr. Patten has counted sixteen nests on Dublin Bay on 21st May 1899. The majority of the young are able to fly in July and are to be seen on the wing about those parts of the coast where they are bred in August and September.

The numbers that breed in a locality fluctuate unaccountably, for in some seasons scarcely any Little Terns can be found, in others they increase unexpectedly, and they sometimes shift their quarters to a neighbouring place.

The nest is a depression in a bank of small shingle, gravel or sand, preferably shell-sand, and is seldom elevated much above high-water mark; consequently the eggs are sometimes lost by being flooded during an exceptionally high tide or storm.

I am favoured by Dr. C. J. Patten with the accompanying illustration of a nest of Little Tern from a photograph by Mr. W. D. Latimer, and the former gives a detailed description of the formation with diagrams in the *Irish Naturalist*, 1899, p. 189. He shows that the bird first excavates in the sand a hollow in the form of an inverted cone or V, and then fills the deeper part of it with broken shells picked off the surrounding surface, which is nearly denuded of them in some cases. On these "lining-shells" the eggs are deposited with their narrow ends towards the bottom of the hollow. The Rev. A. Ellison has observed the sand carefully banked up in a little ring all round the eggs. In many other cases, however, the above details are not carried out.

THE NODDY TERN *Anous stolidus* (Linnæus)

Has once occurred, about 1830.

Thompson records two Noddy Terns which were received in a fresh condition in the summer season by William Massey from the captain of a vessel. He stated that they had been shot in his presence, a few days previously, somewhere off the Leinster coast between the Tuskar and Dublin Bay. Both the specimens were adult birds, and one of them passed with the Warren collection to the Dublin Museum. There is another Noddy Tern among the Irish birds in the Belfast Museum without data, which may be the remaining one mentioned above.

Sub-family LARINÆ.

SABINE'S GULL. *Xema sabinii* (Joseph Sabine).

Accidental visitor in autumn, when it occurs in immature plumage.

Sabine's Gull was first described as occurring in the United Kingdom by Thompson, from a specimen killed in Belfast Lough in 1822. It has now been obtained eleven times in Ireland, and in all these cases the examples were immature, several having been stated to be birds of the year. Seven were shot on Dublin Bay during fifty years, three on Belfast Lough, and one on Donegal Bay.

It is not to be supposed that the records indicate a special tendency of these young Arctic Gulls to harbour in the above bays; but the vicinity of the cities of Dublin and Belfast occasioned their being noticed and preserved, while an ordinary shooter would pass over such birds elsewhere.

Seven of the above instances took place in September, one in October, and two in November. Three of the specimens are in the Dublin Museum, and one, the earliest example, is in that of Belfast. The insensibility of this species to danger was noticed on several occasions in Ireland; thus one of them was shot swimming, after several shots had been fired at a Phalarope which was near it, and in another case Mr. H. Blake Knox, with his first shot, knocked feathers off a Sabine's Gull that was hovering over another bird he had killed; but the former remained over its dead companion until the second barrel brought it down.

One of the birds was found associating with Terns, but none of them are stated to have been accompanied by others of its own species.

Dublin. - A bird of the first year was shot near Kingstown some years before 1834 (Thompson, III., p. 312); another, that had the adjoining parts of the throat and breast white, was obtained on Dublin Bay on 12th September 1837 (Ibid.); a third, which also had the breast white, was shot on

Dublin Bay by Mr. H. Blake Knox at the end of November 1861 (*Zool.*, p.8093 [1862]); a young bird, in plumage similar to the last, was killed on Dublin Bay on 28th September 1866 (H. Blake Knox, in *Zool.*, 1866, p.526); another in first plumage was shot off Kingstown on 18th

September 1867 (Ibid. *Zool.*, s. s., p. 1099); a male, in first year's plumage, was shot near the Pigeon House Fort on 24th September 1881 (More, in *Zool.*, 1881, p. 472); another male, in similar plumage, was obtained at Clontarf on 5th November 1884 (Dowling, in *Zool.*, 1884, p. 490).

Down and Antrim. - One in the plumage of the first autumn was shot on Belfast Lough on 18th September 1822 (Thompson, III., p. 810); a bird of the year was obtained on the same bay on 15th September 1884 (Ibid., p. 812); another, in first plumage, which occurred off Bangor at the mouth

of the bay, was killed the second week in October 1867

(H. Blake Knox, in *Zool.*, p. 1099.)

Donegal. - A bird of the year was shot on Donegal Bay on 19th September 1878 (Williams, in *Zool.*, 1878, p. 487).

A bird reported doubtfully as a "Hawk" was noticed at Mine Head, co. Waterford, in October 1897. It was described as "nearly all of a light grey or white, and had a black head with a forked tail" (Migration Report, 1897, p. 549). This bird may have been an adult Sabine's Gull, but was not obtained.

BONAPARTE'S GULL. *Larus philadelphia*, Pallas

Has once been obtained in Ireland.

Bonaparte's Gull is another American species introduced to the British fauna by Thompson, who describes a nearly mature bird that was shot on the tidal portion of the Lagan above Belfast on 1st February 1848 (Vol. III., p. 317). It was a male in winter plumage, and he examined it in the flesh. This specimen is still preserved in the Belfast Museum.

THE LITTLE GULL. *Larus minutus*, Pallas.

Very rare and accidental visitor in autumn and winter.

The Little Gull has been recorded on ten occasions in Ireland, in six of which it was said to have been obtained, but of some, even of the latter cases, we have very incomplete data. As with some other rare birds, the majority were announced from the vicinity of Dublin and Belfast, but one occurred on Lough Foyle, and another on the Shannon. None have been recorded since the bird seen by Cox in 1876. The earliest example, which was in company with a second individual, was shot on 5th August, and there are four records for December, one for January, and one for February. Several adults are mentioned, but some of the specimens have been immature.

King's Co. and Galway. - An adult bird was shot on the Shannon where it divides these counties on 5th August 1840 (Thompson, III., p. 315). This example is in the Dublin Museum.

Dublin. - Two Little Gulls were said by Kinahan to have been seen by him on Dublin Bay at different times (P. Dublin Univ. Zool. Assn., 16th December 1854). One was stated to have occurred on Dublin Bay in December 1870 (Mr. H. Blake Knox, in *Zool.*, s. s., p. 2646 [1879]); another was seen by Cox feeding among other Gulls on the Liffey at Ring send on 6th December 1876. It came close to him several times and remained for about a week (*Zool.*, 1879, p. 486.)

Down and Antrim. - An adult male was shot on the estuary three miles from Belfast on 23rd December 1847; it was described by Thompson, and is still in the Belfast Museum. Darragh, the curator of that museum, who preserved the

former, saw and fired at another similar bird on Strangford Lough on 18th and 19th January 1848; another, in adult plumage, was said to have been shot on Belfast Bay in November 1848, but was not preserved; while another specimen was wounded near Kircubbin, Strangford Lough, about the beginning of February 1849. It was allowed to run in a garden, where it disappeared. The last four instances are given by Thompson.

Londonderry. - A winter example was mentioned as having occurred on Lough Foyle by Mr. H. Blake Knox (*Zool.*, s.s p. 2646 [1871]). He has kindly sent me a photograph of one of the above specimens, an immature bird in his collection.

THE BLACK HEADED GULL. *Larus ridibundus* (Linnæus).

Resident and abundant, Breeds extensively through Ireland, except in the East and South.

The Black-headed Gull is probably the most plentiful of the genus in this country, and has a great number of colonies scattered over the land, from those vast assemblages which number many thousands down to groups of a few pairs.

A marine breeding-place is mentioned by Mr. Turle, who found a small colony on Beginish, a low island of the Basket group in Kerry (*Ibis*, 1891, p. 10). The nests were placed near the center of this island, on marshy ground, round which rushes grew. The only other part of Kerry where I have heard of the bird breeding is the Castleisland district, and the next most southern resort is Lough Gur in Limerick, where a few nest. I am not aware of any breeding-place in the maritime counties from Kerry eastwards up to Down in Ulster, nor in Carlow or Meath - that is to say, the parts of Ireland to which the Black-headed Gull does not seem to resort, until after it has reared its young, are southern Munster and eastern Leinster. It is, in fact, an inland-breeding species in this country, and when the central plain is reached the largest colonies are found in Queen's and King's Counties on marshes, like Raheenlough, and on red bogs like that of Monettia, near Clonaslie. To the latter a vast colony has shifted since 1898 that previously breed on the neighbouring Killeenmore Bog in King's Co. There are similar resorts in the bogs of Tipperary, Galway, Kildare, King's co., Westmeath, and Longford.

Islands in lakes are also favourite breeding-places, and probably the most southern of these is in co. Kilkenny, a few miles from Waterford, Other resorts are the Lushings, on the Clare side of Lough Derg, islands in Loughs Corrib, Mask, Conn, Gara, Key, Allen, in Upper and Lower Lough Erne, in various Donegal lakes, one of which, Kinny Lough, adjoins the sand-hills of the north coast. Black-headed Gulls have also bred since Thompson's time on Lough Neagh and on some lakes in Down.

In July, when the young broods are able to travel, these flock to the tidal rivers and bays; and during the autumn, when fish are plentiful, abound on the sea round our coasts. As winter approaches these flocks spread over the country during the day, eagerly following the plough for the worms that are turned up, but they retire towards evening to roost on some isolated sea-bank or other marine retreat if such be within reach. All through winter Black-headed Gulls may be met with daily on the tillage and pasture-lands of Ireland, and they associate with Common Gulls when these are driven south by the December storms.

On Rathlin Island the Black-headed Gull is found in great numbers in winter, but is absent in summer, though birds not in full maturity may be seen on parts of the coasts and estuaries in summer.

From 20th February, in some seasons, to the first week in March, these birds reappear at their breeding-haunts, and in April the eggs are laid in favourable localities, the earliest young being hatched by 1st May; but on exposed stony islands, as those in Lough Allen, I found no young out of the eggs on 3rd June.

In certain marshes the nests are placed upon tussocks with water between them; on the great red bogs the wettest parts are chosen, and the eggs are to be found round the margins of the pools or on islets, surrounded by black water or mud. On the lakes very small islands or low rocks are used, the nests being crowded together and built in curious places, as on an ancient fort, on the top of a stone beacon, or within a walled hiding-place used by duck-shooters in winter. On crowded islets Gulls evidently fight for the best places, and I have found many young dead; in one case three of them were flattened out and an egg laid upon them. Tufted Ducks or Common Terns sometimes nest round the edges of a colony of this Gull, and the breeding-place of the Sandwich Terns on Rathroen Lake in Mayo is in the middle of a crowded island chiefly occupied by the nests of Black-headed Gulls.

In a season of great drought the old birds have been known to forsake their bog about the end of June, leaving thousands of young to perish.

Black-headed Gulls will drive away the Lesser Black-back from their haunt, as I have seen them do on Lough Corrib, where both species breed; while vigorous attacks are sometimes made on Rooks, the Gulls employing great skill in driving their enemies out over the waters of a lake before making their final onslaught.

These Gulls delight in taking May-flies or ghost-moths on the wing, and numbers may thus be seen engaged in the twilight, and far on into the night over the meadows near a breeding-lake.

In severe frost, when Lapwings are driven to the southern pastures each of these birds may sometimes be seen shadowed by a Black-headed Gull, and the moment the Plover pulls out a worm the attendant Gull rushes forward to seize it; the Lapwing takes flight and doubles like a hare, closely pursued by its tormentor. Possibly the name of Lapwing-Gull may be given in consequence of this habit.

In easterly gales, when masses of rotten sea-weed covered with flies are floated off the shore, Black-headed Gulls may be seen feeding on them after the manner of the Phalarope (H. Blake Knox, in *Zool.*, s. s., p. 1193 [1868]).

I have seen a wing of a bird of this species that was killed in December, and the first four primaries, especially their quills, were of a decidedly rosy hue. The breast also was said to have been rose-coloured. Thompson describes a similar specimen, killed in October, which he believed to have been a very old individual.

THE COMMON GULL. *Larus canus*, Linnæus.

Resident, but confined in its breeding-range to the coast-region of the North and West. Wanders over the rest of Ireland in winter, when the numbers are probably increased by immigration.

Of the six species of Gull that breed in Ireland this is the most restricted in its nesting-haunts, which are never very remote from the sea, though more frequently on lakes than on the coast.

The low, grassy island off Kerry, mentioned to Thompson in 1837, has not since been identified, but a small colony exists on one of the Blaskets, and this is the most isolated breeding-resort of the species known in Ireland, as well as the most southern in Europe. In 1890 I found two breeding colonies near Roundstone and Carna in Connemara; these were on small rocky islets in moorland lakes not far from the coast, and in 1899 I visited another resort, similarly situated west of Letterfrack.

In Mayo considerable colonies exist. A few pairs breed in company with Black-headed Gulls on a low-lying island in a recess of Blacksod Bay; and when I was driving through the desolate moors from Belmullet in 1890 a lake called Dahybaun, about fourteen miles from the sea, was passed, on which some fifty pairs were nesting. They occupied the southern escarpment of a large island, and some of the birds feeding by the roadside allowed the car to pass within a few yards of them. Mr. Warren found the numbers of Gulls reduced at Lough Dahybaun in 1898, but we observed others resorting to islands in Lough Carrowmore. In 1883 he discovered a small colony nesting on bog-stumps that stood above the water of a small lake near Crossmolina, and in 1894 he met with about thirty pairs breeding on an island in Lough Cullin, as well as isolated pairs on islets and rocky points in Loughs Conn and Mask. Some of the last-named localities are probably the most inland places in Ireland where the Common Gull breeds.

A former colony which Mr. Warren discovered in 1855, on Lough Talt in western Sligo, has ceased to exist; but on the Bomore Rock off northern Sligo a bird of this species was found hatching on a low shelf in 1896.

In Donegal the Common Gull has some of its most considerable settlements. On Loughs Birroge and Doon, near Naran, a good many pairs nest, and in the Dunglow district there are colonies or isolated nests on most of the lakes in the vicinity, especially on Lough Meela (where I noticed a decided increase in 1896) and on the Meenbanad Lakes. Mr. R. Patterson and Mr. Campbell discovered some maritime breeding-resorts in the north of Donegal in 1892; off one prominent headland about one hundred nests were placed on ledges of the sloping cliffs of a small island, and about twenty more were in another spot in the same locality. The same gentlemen found another colony at a point of the coast distant fourteen miles from the above, while between these a small lake separated from the coast by sand-hills afforded a third breeding-place. An island in Mulroy Bay also contains a settlement, and there are other resorts in the above counties besides those named.

Thompson's information as to Common Gulls nesting on the lofty cliffs of Horn Head and of Rathlin Island was evidently erroneous, for it is foreign to the habits of this bird to build on high, steep cliffs, and it has so seldom been noticed in Rathlin that a specimen shot there in 1860 was preserved as remarkable.

The eggs are laid in May, and young are sometimes hatched the first week in June. The nests are made loosely of dried grass or sedge, but are better built than those of the Black-headed Gull. They are placed in nooks and depressions of the rock, or among scrub and stones round the islands; not in tall grass, unless the space be too small to allow of a choice outside the deeper vegetation.

A favourite site is the top of a boulder or spike of rock projecting out of a lake, on which a single nest may often be seen occupying any slight cavity, and the Gull upon it looks most conspicuous. Nests have been found upon the top of an ancient fort. On one island the birds were nesting among the heather on the highest points; while the breeding-islands often contain bushes, and in one case a nest was partially sheltered by a dwarf willow. Common Terns or Black-headed Gulls occasionally share the same islands with this species, though it usually has its colonies apart. The breeding birds will swoop at the intruder and utter one deep, menacing note followed by a cackle.

Though the colonies are never found in the Midlands like those of *L. ridibundus* this is less of a marine Gull than the following species, not only in the choice of its nesting places, but in its habits generally. It seems to prefer harbours, navigable rivers, the coasts of the mainland, and even the inland fields, to the deep sea. It arrives on Dublin Bay and Wexford Harbour from July and August onwards in large numbers, but does not appear in force in southern counties until the winter storms set in during November or December. Flocks of these Gulls may then be seen feeding on the pastures or following the plough; and they are fond of resorting to a flooded field where the worms are drowned out. They frequently keep to themselves, but sometimes associate with Black-headed Gulls whose inland-feeding habits are similar; but the appearance of the Common Gull in winter is far less frequent than that of its congener, and depends more upon the occurrence of wild and wet weather. This bird is seldom seen in the south after March, but further north it lingers later, and immature birds of the previous year occur during spring and summer on the bays and rivers; though even they are scarce at that time of year.

Mr. Barrett-Hamilton's photograph, reproduced below, represents the north point of Inishnabro Island, co. Kerry.



THE HERRING-GULL. *Larus argentatus*, J. F. Gmelin

Resident and common at all seasons on the coasts, where it breeds more extensively than any other Gull.

Though not found in such dense colonies as the Kittiwake, the Herring-Gull is much the most generally distributed marine-breeding species of its family. It nests in greater or lesser numbers on all the precipitous coasts and larger islands of Ireland, thus including in its breeding-range every maritime county except perhaps Wicklow, Louth and Down, whose shores are low-lying; but close observation may find that even in these a few Herring-Gulls rear their young.

It is a common breeding species along the whole Munster coast, having a huge colony on the cliffs of Moher in Clare, and is the principal Gull that nests in co. Waterford. On the South Saltee Island, off co. Wexford, Herring-Gulls build, in larger numbers than I have seen anywhere else, in company with Lesser Black-backs. The next breeding-place I know of is on Lambay off co. Dublin. The cliffs of Antrim and Donegal have many colonies, including large ones on Rathlin Island and Horn Head, and there is another at Downhill in Londonderry. Aughris Head is a resort in co. Sligo; while along the lofty northern coasts of Mayo there are large colonies. I have seen these birds breeding at the Dooega cliffs in Achill, on the Bills Rocks, and on the cliffs of Inishturk, Inishark and the Aran Islands, but on the western and southern shores of Connaught they seem to have fewer resorts than in the above-named localities, probably owing to the want of cliffs.

No inland breeding-place is known in Ireland, and though I have seen a flock feeding in the fields in July about five miles from the sea, and have occasionally seen and heard of these birds inland, they are much more unusual there than the last two species. They will, however, fly far up rivers, especially those which serve as the ports of towns, for the sake of the offal which they pick up, and they have been found on Lough Neagh in autumn and winter.

The Herring-Gull frequents the coasts and tidal waters of Ireland at all seasons, and as it takes four years to arrive at maturity the numbers in the brown speckled garb of immature birds are large. These are to be seen far from the breeding-haunts of their elders in spring and summer, and Thompson describes a movement of thousands of them in Belfast Lough which passed southward in September.

The love of this bird for fish is evidenced by the exciting spectacle so familiar along our shores, when a shoal attracts the vociferous Herring-Gulls, which soar above it and form a wheeling throng, and precipitate themselves in a shower upon the sparkling patch of water where their prey is thickest. They are, moreover, inveterate egg-stealers, and I have seen desolation brought by them upon the nests of a whole colony of

Cormorants which flew off their eggs on our approach, but before they could return the Herring-Gulls had carried every egg away. This they do by inserting the bill into an egg, when they carry it off to suck in an accustomed spot, where egg-shells of various species may be found. The haunts of these birds are usually strewn with the lumps of broken-up marine shells which they disgorge. Their castings also frequently contain the bones and fur of young rabbits which they have devoured (Thompson, Ill., p. 363), and migrating land-birds often fall a prey. These Gulls do not usually attack a flock, but when they meet with a Blackbird or Lark exhausted by its flight across the sea they chase and swallow it, feathers and all. The danger of this fate may well have given rise to the migration of so many land-birds by night (Barrington). A Gull, probably of this species, has even been seen to pursue a Peregrine and make it drop its quarry, which was seized upon by the former (Migration Reports). Pieces of candle are often picked up at sea by these birds, and after being swallowed are disgorged at their haunts (*Zool.*, 1894, pp. 308 and 334).

Herring-Gulls do not, like Kittiwakes, crowd their nests together, and do not place them on such very steep parts of the cliff. They prefer shelving rocks or a place where there is a talus or broken ground between the upper and lower precipice, but they often build upon ledges or on the top of an isolated rock. A single nest in such a position seems to make its occupant quite as happy as a place among other nests. These are often on grassy slopes where the ground is more or less broken by rock. On the South Saltee the colony of Herring-Gulls and Lesser Black-backs extends right across a hill two hundred feet in height, from one side of the island to the other. The nests are thickest on the slopes, where they occupy the nooks and corners, but are sometimes on the bare hill-top, and I have seen one on a path. Of the two species, this occupies situations which are more prominent and lofty than those where Lesser Black-backs nest; while a few Great Black-backed Gulls occupy the rocky summits. The nests are composed of tufts of thrift or of dry grass and other soft materials. I have never seen sticks or thick stems of heather used, such as Thompson found near the Giant's Causeway.

Herring-Gulls congregate at their breeding-haunts in co. Waterford by the middle of April. The first eggs are laid early in May, but a set is rarely completed by the first week in that month. Few young ones are hatched before the beginning of June; they soon leave the nest and creep along the cliff-ledges, with a wonderful power to avoid falling over, and hide among the herbage. Most of them are fledged and swimming by the end of July.

THE LESSER BLACK-BACKED GULL. *Larus fuscus*,
Linnaeus.

Resident, but rather local, and much less numerous than the Herring-Gull. Breeds both on salt and fresh water, as well as on inland bogs.

The Lesser Black-backed Gull frequents inland localities in summer much more than either of the other large resident Gulls, and, even at its marine breeding-stations, it does not seem so ready to place its nest on salient rocks as the Herring-Gull. The colonies of this species round the Irish coast are much smaller and fewer than those of the last-named bird, among whose nests it often places its own, forming a mixed colony of both species. In Kerry, this Gull breeds on the Mucklaghmore Rock off Tralee, on the Blaskets, Puffin Island and the Little Skellig; in Cork, on the Cow Rock, High Island and the Sovereign Islands; but no very large colony is to be found until the Saltees, off Wexford, are reached. This, I believe, is the largest assemblage of Lesser Black-backs in Ireland, though much outnumbered there by the associated Herring-Gulls. A few pairs still nest on Lambay, co. Dublin, and rather more on Rathlin Island. It is said that some breed at Horn Head, though I failed to see any there in 1891, but I found several pairs nesting on Illanaran, in company with Great Black-backs and Herring-Gulls; while others breed on the, adjacent Aranmore, and Slieve League is another resort in Donegal. Mr. Sheridan says this bird has nesting-places on the islands near Achill, though I know of no other resorts round the Connaught coasts, which are probably too wild for it, but I have seen a few Lesser Black-backs at the cliffs of Moher, co. Clare, in June.

Of inland colonies there are none in Munster, but Mr. Palmer has described one of about a hundred pairs scattered over an extensive tract of bog in co. Kildare (*Irish Nat.*, 1898, p. 186). A few breed here and there on the bogs of Westmeath and Galway, and I have seen an egg taken from such a situation on the Clonbrock Estate in the latter county. Single birds or pairs appear regularly in March on Lough Derg, and continue there through summer, though their breeding-place is unknown; and I have seen others in June on several inland parts of the Shannon and the lakes connected with it up to its source, as well as on the Nore at Thomastown.

In Connaught the great lakes Corrib and Mask contain many breeding-places. The nests are scattered about, usually one on each stony island, but I have counted four in proximity among a labyrinth of reefs and shoals

that was almost unnavigable, and Mr. Warren found some twenty nests on an island in the northern part of Lough Mask. He thinks this species no longer breeds (as it formerly did) on Lough Conn. There is a small wooded island in Lough Erne, co. Fermanagh, on the broad, flat beach of which fifteen or more nests have been found among the coarse shingle and blocks of stone; but one of the most interesting colonies I have seen is among the mountains of co. Antrim. I was conducted by Mr. H. D. M. Barton to a great floe-bog at an elevation of about a thousand feet, on which Curlews were nesting, when we found about twenty pairs of Lesser Black-backed Gulls. Their nests were scattered over the bog on hummocks, but were mere depressions among the herbage with a few bits of grey lichen, very different from the large comfortable nests which are made on the stony islands of Lough Corrib. It is probable that this bird had many more inland resorts than can be found at the present day, but that it has been driven from them, as its eggs are sought for by the peasants, while keepers persecute it, under the belief that it takes the eggs of Grouse.

The local habits of this Gull on the coast are very pronounced; thus it is hardly ever seen along most of the co. Waterford shores, but its fondness for the offal of towns is so great that a flock of these handsome birds is an every-day sight on the Suir at Waterford even in May and June, though their nearest breeding-place is on the Saltees, thirty miles away. There is a decided movement of the species in spring, and Cox states that though some immature birds occur in Dublin Bay in winter, there are no considerable arrivals there until spring. In April flocks may be seen along that coast which diminish in May, but reappear as if on their return journey in August and September. This bird is rarely seen inland in winter, but in spring and Summer it is not only common on the Liffey at Dublin, but wanders inland daily, singly or in pairs, following some river or canal and returning towards the sea in the evening. Its summer appearances have been noticed in many inland localities.

The Lesser Black back has the same propensity to steal the eggs of other birds as the Herring-Gull, though it may not carry this to the same extent; it will also devour helpless birds. During April 1895 some fifty dead Guillemots were seen floating near Tralee Bay, and eleven Gulls of this species were feeding on them upon the water (Migration Reports). The Lesser Black-back has also been seen to chase a Kittiwake until it disgorged its prey, and then catch the falling morsel like a Skua (Ogilby, in *Zool.*, s.s, p. 4905 [1875]).

On the lake-islands in Connaught this bird makes a wide comfortable nest of dead bracken, moss and the tufts of dead vegetable matter left by the winter storms on the beach. The site is well above the flat part of the beach among the larger stones, and is sometimes shaded by a willow or other small bush; I have even seen a nest on the ground in the midst of a bush which was open enough to afford space for it.

On the Saltees the earliest eggs are laid at the commencement of May, but many fresh ones may be found much later in that month, and at the inland resorts eggs are often unhatched at the end of the first week in June. A set of a green-blue colour was found on the Saltees by the late Mr. Seebohm.

THE GREAT BLACK-BACKED GULL. *Larus marinus*, Linnæus.

Resident in small numbers round Ireland; more common on the western coast.

This fine bird is usually to be seen singly or in pairs, and does not flock in winter to any such extent as the smaller species; but at certain favourite breeding-stations several pairs in one case fully fifty pairs-nest in company. As a rule, the further west one goes the oftener this bird is met with, and along the Connaught coasts, for instance, it is much more frequent than the Lesser Black-backed Gull. In Kerry the Mucklaghmore Rock is a long-known resort where this species breeds as well as the last. On the outer Blaskets, and also on the Little Skellig, and again on the Cow Rock, several pairs nest; but other stacks and islands nearer the shore are occupied by one or more pairs. An occasional pair breed on the tops of stacks along the coasts of western Cork, and in one such place in co. Waterford. On the South Saltee several pairs build chiefly on the tops of the highest eminences, which rise to two hundred feet. Great Black-backed Gulls have long bred on Lambay, though less regularly of later years. I am not aware of any nesting-places on the north-east coast. In Donegal this bird has bred on Lough Swilly and on a stack at Horn Head; I found a small colony on Illanaran, and a pair nesting on the low rocks of Roaninish. The district near Naran is the only part of Ireland in which I have ascertained that this Gull breeds on islands in fresh-water loughs, but it is much persecuted there. In Mayo twelve or fifteen pairs have their nests on the flat grassy summit of a pillar-like rock at Downpatrick Head, and a few breed on the Stags of Broadhaven. The largest colony probably in the British Islands is on the Bills Rocks, seven miles from Achill. I landed there in 1890 with Rev. W. S. Green, and viewing the wheeling cloud of these birds, which we had roused from their nests, we agreed that an estimate of fifty pairs would be too

small. The young, and the nests, which they had in many cases quitted, lay around us among bosses of gigantic thrift, not on the top of the rocky ridge, but on the slope beneath it facing south. These rocks are difficult to land on, being exposed to the full sweep of the Atlantic. There are other breeding-places off the Connemara coasts, at Inishark, Cruagh and the Skerds, where one or more nests are found on each stack; but I have no information about this bird from the Clare coast.

In winter the Great Black-backed Gull may be seen standing, usually alone on the sands of estuaries and at that season it visits all parts of the coast and the harbours, becoming a familiar object in places far from its summer haunts. Little bands of four or more, probably representing family groups, are not uncommon. Twelve have been remarked as an uncommon sight on Queenstown Harbour, and Thompson mentioned a group of fifteen on Belfast Lough, with others scattered on the beach around them. These Gulls are more apt to come up harbours in stormy weather, but they may often be seen among other Gulls on the Suir at Waterford. In Donegal and Mayo one of them sometimes follows the course of a river for many miles inland, and birds of this species have been met with on Lough Derg and other parts of the Shannon; however, it must be borne in mind that the appearance of the Great Black-back inland is exceptional.

Its voracity in stealing eggs and killing wounded birds as large as a Wigeon is well known in Ireland, and the largest flocks of Brent Geese will take wing when one of these depredators appears overhead. A young brood of Mergansers was taken one by one from a Kerry lake by a Gull of this species, and the pellets disgorged beside the nests commonly consist of the remains of young rabbits, where these are to be got. I have found the bones of gurnard thus deposited at Roaninish.

Professor Leebody describes an attack made on the wing by a Peregrine upon a Great Black-back, which, as often as the Falcon stooped upon it, successfully presented its bill, and caused its enemy to swerve aside, though unable to attack the latter.

The favourite nesting-place is the top of a high isolated rock, where the "Royal Gull," as it is called, dominates its inferior relations which breed lower down. On a hill or headland the same love of the highest elevation is shown. I have, however, known of a nest built on an ancient fort in a Donegal lake near the coast, and a more remarkable site was chosen on the enclosed fresh-water portion of Lough Swilly, seventeen miles from the sea, where a Great Black-backed Gull built and laid upon a sand-bank of small dimensions, on which Terns usually breed. On the Saltees the eggs, as it appears, are laid by the beginning of May, if not earlier; but I have found late clutches still unhatched on the Bills in the middle of June, though in most cases, to judge from their size, the young there must have been hatched in May. I have never seen Irish eggs of the red colour sometimes obtained in Norway, but some with a pale blue ground and scarcely any spots have been found.

The Cow Rock, off Dursey Head, co. Cork, here represented, is a breeding-place of the Great Black-backed Gull. It is reproduced from a photograph by Mr. Barrett-Hamilton.



THE GLAUCOUS GULL.

Larus glaucus, O. Fabricius.

Uncertain winter-visitor, occurring occasionally in very small numbers

The Glaucous Gull probably visits the coasts of this country in most winters, though only as a straggler, for several individuals are rarely seen together, and the specimens obtained have in most cases been immature. It wanders to the south of Ireland, but is most frequent on the north and west coasts, and is met with occasionally on tidal rivers. Coming as this species does from the north, the island of Rathlin and the coasts of Donegal have repeated records of its visits, and Mr. W. Sinclair, who lived on the north side of Donegal Bay, stated that it was to be found there almost every winter, though he had never seen more than two at a time; while Mr. Warren has obtained a considerable series of specimens on the Moy and Killala Bay during more than forty years (*Irish Nat.*, 1892, p. 154) This Gull has also occurred in western Mayo and Galway, and it has been repeatedly obtained on the north coast of Kerry; while its visits are extended to Cork. Though it has not

been identified in co. Waterford, still in several instances white or drab-coloured Gulls have been shot or observed on Dungarvan Bay or on the Suir near Waterford. Dublin Bay is the only locality on the eastern side of the island known to have been repeatedly visited by this bird, and it does not seem to have been noticed on the coasts of Wicklow or Wexford.

Sixty-five cases of the occurrence of the Glaucous Gull have been distributed as follows:-

Dublin.....8	Down.....2	Sligo.....8	Kerry.....8
Louth.....1	Antrim.....5	Mayo.....15	Limerick.....1
Londonderry.2	Galway.....8	Cork.....4	
Donegal.....7	Waterford...1		
Leinster.....9	Ulster.....16	Connaught..26	Munster.....14

The months given in fifty-three cases are as follows:-

January.....10	April.....2	July.....8	October.....6
February...12	May.....-	August.....-	November...3
March.....7	June.....-	September..2	December...8

It will be seen that thirty of these instances occurred in the winter months of December, January and February. The three cases that took place in July are recorded by Thompson.

The Migration Reports contain a good many notices of Gulls which, from the descriptions, must have been of this or the next species. Such information has come chiefly from Donegal stations, from Black Rock, co. Mayo, and from the Tearaght, co. Kerry, the harbours of Queenstown and Dungarvan having also furnished similar notices, which amount in all to about twenty-four. These corroborate in a general way the preference of the Arctic Gulls for the north and west coasts and the occasional extension of their winter range to Cork and Waterford.

In certain seasons there is a special visitation of Glaucous and Iceland Gulls, as in the winter of 1891-92 (Irish Nat., 1892, p. 19).

Mr. Sinclair observed that the Glaucous Gull is exceedingly fierce and pugnacious, driving off even the Great Black-back from any prey it may have found on the shore; this is frequently carrion, for the species under consideration has been repeatedly observed feeding on some dead animal or fish stranded by the tide, and Cox noticed a Glaucous Gull which resorted to such an object for a week or ten days, and he added that it was very shy of approach. Mr. Warren, in commenting on this trait, remarks that in this particular the species differs from the Iceland Gull, which seldom shows any alarm. The former can, he adds, be easily distinguished from the latter when on the wing by its large size and heavier flight, which is more like that of the Great Black-backed Gull. When at rest the tips of the primary feathers extend just to the end of the tail, sometimes slightly beyond it; while in the Iceland Gull they project from two to two and a-half inches beyond the tail.

The whiter primaries readily distinguish either of these northern species from our native Gulls when in flight.

THE ICELAND GULL. *Larus leucopterus*, Faber

Uncertain winter-visitor, occurring occasionally in very small numbers.

The Iceland Gull visits the Irish coasts not infrequently, although in the same irregular way as the Glaucous Gull, and whatever may be the causes that lead birds of the one species to this country in special seasons these seem to operate similarly upon the other. Thus in 1891-92 several of each white-winged species were obtained on different parts of the north and west coasts, indicating that a flight of these northern birds reached Ireland during that winter. There were five of the Glaucous recorded, from Rathlin in Antrim, Donegal, Mayo and Galway; and eleven Iceland Gulls from Donegal Bay, Killala Bay, western Mayo, Dingle in Kerry; and finally an Iceland Gull was seen at Kinsale, co. Cork, in May 1892, by Mr. H. Leybourne Popham.

The Iceland Gull occurs in this country at least as frequently and in about the same numbers as the Glaucous, and visits very much the same parts of the coast, occurring repeatedly in Dublin Bay, Donegal, Mayo and Sligo, extending its visits to Kerry and Cork; but it has not been recorded from the South-East. In most of

the cases there were single birds; but two, and even three, have been met with together. Sixty-eight instances were distributed as follows:-

Dublin.....11	Antrim.....2	Sligo.....17	Kerry.....10
	Londonderry.2	Mayo.....5	Cork.....10
	Donegal.....11		
Leinster....11	Ulster.....15	Connaught .22	Munster....20

It is remarkable that so many should have been obtained in the extreme South, but it should be observed that five of the birds killed in co. Cork were noticed by Mr. Warren, to whom are due seventeen records from Mayo and Sligo, which form the majority of those from Connaught.. Mr. Blake Knox made nearly all the records available for co. Dublin; and it is probable that if other good observers resided elsewhere on our coast the visits of this species would be found to be more frequent and widespread than they are supposed to be.

Sixty-seven birds were seen or obtained in the following months:-

January.....15	April.....3	July.....-	October.....4
February....13	May.....3	August.....1	November...6
March.....4	June.....2	September.1	December... 15

The first thing to observe about these numbers is that nearly sixty-three per cent of the birds occurred in the months of December, January and February, being a somewhat larger proportion than was ascertained in the case of Glaucous Gulls noted for those months. The Iceland Gull has been recorded every month in the year except July. Both the June instances took place in co. Sligo, in one a bird of the second year was seen by Mr. Warren, and the other, an adult, was picked up dead at Mullaghmore by Mr. C. Langham, who had it preserved. It had evidently been shot at, as both legs were broken.

Adult individuals and birds in the dark plumage of their first year appear not to be so often obtained as those which are considered to be in their 'second year.

Mr. Warren, who has had so many opportunities of observing this bird, states that it may be distinguished from the Glaucous Gull by its buoyant, gliding flight, which is due to the proportionate length of wing, for when at rest the wings extend from two to two and a-half inches beyond the tail, which is not the case with the other species. Moreover, this Gull is not wary like the Glaucous, but has singularly little fear of man, having been known to alight on a road within thirty yards of persons standing there. Thompson mentions one which kept its ground while boys were throwing stones at it, and only flew a few yards when it was struck.

The Iceland Gull sometimes associates with Herring-Gulls or others, and will make excursions into the fields and follow the plough for worms when not too far from the sea. It has been repeatedly shot on Queenstown Harbour.

Like the Glaucous, the Iceland Gull will feed on dead carcasses and offal; and when the entrails of fish were thrown to one of these birds its eagerness was such that the observer thought it would have taken the food from his hand.

THE KITTIWAKE GULL. *Rissa tridactyla* (Linnæus).

Resident, but rarely seen in winter. Breeds in vast colonies on the more precipitous coasts and islands, but, though exceedingly numerous, is decidedly local.

The Kittiwake is exclusively maritime in its habits, and prefers as breeding-resorts the most beetling cliffs and exposed islands. In Kerry it has large colonies on the Blaskets and the Skelligs. In Cork the Bull and Cow Rocks are resorts of this bird, which is mentioned as breeding regularly by gentlemen residing on the south coast of the county. In Waterford the Kittiwake has no considerable colonies, though Helvick Head was mentioned by Thompson, but on the Saltees it is to be found in very large numbers on the cliffs, both of rock and boulder clay, round the south island. Lambay and Rockabill are the only breeding-resorts on the east coast, except the neighbouring rock of Ireland's Eye, which recently held a small number. Kittiwakes nest in enormous numbers on the north side of Rathlin Island, but one of the largest colonies in Ireland is at Horn

Head, where for miles the birds people the cliffs, together with the Auk family, for two hundred feet above the sea.

The next great Donegal colony is Tormore, a colossal pillar-like rock off the western peninsula. Aughris Head in Sligo is the home of great numbers, and along the north coast of Mayo there are several colonies, among which may be mentioned Downpatrick Head. The precipitous faces of the Bils, off Achill, hold an assemblage of these and other rock-birds. The colonies on Inishmore, the chief island of the Aran group, are not extensive, but the largest in Ireland is. I should say, on the cliffs of Moher in Clare. There the great bird-colony, composed very much of Kittiwakes, extends upwards for some five hundred feet, though it does not stretch for so many miles as the bird-cliffs of Horn Head.

Those picturesque cliffs of Moher afford the greatest display of bird-life within the same length of coast-line in Ireland. The weathering of the limestone strata has left on them a series of shelves and horizontal fissures, admirably suited to the cliff-breeding birds which have so largely availed themselves of this noble stronghold. A detached obelisk of the rock rises probably to two hundred feet out of the sea at the base of these lofty cliffs. Shelves and cornices run round it the whole way up and these are all thickly tenanted, the rows of white Kittiwakes on their nests reminding one of the ornaments on a bridecake.

These birds return after the winter to their rocky homes in March, and on the 4th of that month they have been observed to land in numbers on the Skelligs, while a great migration has been noticed at Slyne Head passing north in March and early in April. These birds are, however, late breeders carrying on the preparation of their nests for some time; in fact, allowing for some birds being earlier than others, the process goes on for about six weeks. They tear the grass off the banks until the ground is as bare as a fallow, they fish up pondweed from the pools, and dig up mud with their beaks, carrying a little bit of it each time to form the small compact nest, which looks from beneath as if it were stuck against the rock, like a nest of the Swallow family. These nests stand in rows, almost touching at times; the birds occupying them in perfect harmony, and forming denser colonies than those of any of the larger Gulls. As a rule they confine themselves to the lower portion of the cliff, except where this is very thickly inhabited.

Kittiwakes may be seen occupying their nests in rows long before an egg is laid. Few eggs are produced before the end of May, the majority being laid during the early part of June. Mr. H. C. Hart observed three as the usual number in each nest at Lambay, but at the Saltees and on the Kerry Islands I have found sets of two eggs greatly outnumbering those of three, which are almost exceptional. The young do not fly until the end of July or the month of August, after which old and young follow the shoals of fish along the coasts and disappear generally in October with the mackerel; on the 9th of that month thousands have been seen passing Dungarvan Lighthouse towards the south-west. Very few are to be met with in winter, and they prefer deeper water than the other species, never frequenting fresh water nor resorting to the fields to feed like the Black-headed and Common Gulls. Kittiwakes that do occur on our shores in winter are frequently emaciated, storm-driven birds, and such are sometimes found far inland. Colonel H. W. Feilden observed these little Gulls following the vessel, on 24th October, 450 miles from Cape Clear. Flocks of one-year-old birds, though immature, have been seen at the breeding-haunts of the species, and this has been accounted for by the fact that the best bird-cliffs are near a good run of tide which is a highway for migrating fish; nevertheless, the appearance of young birds of the previous year at such places is exceptional, but they may be found in June at the Copeland Islands, which are far from any breeding-haunt.

The habits of Kittiwakes at their nesting stations are very engaging to watch; their dove-like motions harmonising with the happy scene, and their sweet, plaintive voices echoing from the cliffs in chorus. When a bird returns from the sea to its mate on the nest both hold their wings uplifted and continue caning for some moments with necks crossing, first right and then left, until the newly arrived Kittiwake delivers up the prey it has brought to the hatching bird. Kittiwakes feed till very late in the evening, and are often thus engaged at dusk, particularly in the spring. Mr. H. Blake Knox, who makes the last remark, has dealt in detail with the plumage at different ages (*Zool.*, s. s., p. 548).

THE IVORY GULL. *Pagophila eburnea* (Phipps).

Has been twice obtained, once in Kerry and once in Cork.

The first instance on record in which the Ivory Gull was obtained in Ireland took place after a storm in February 1846, when two alighted in the yard at Blennerville, co. Kerry, and from their want of fear were looked upon as tame birds. On the third day, however, one of them, an immature bird, was shot; and I lately

inspected it among the birds in the Chute Hall collection. It has black tips to the tail and primaries, and a black spot between the beak and eye, but the rest of the plumage is white. Its companion was said by Chute to have been pure white (Thompson, III., p. 347).

A second specimen, now in Queen's College' Museum, Cork, was shot by Captain Newburgh in Bantry Bay, on 31st January 1852.

In both these instances the Ivory Gull visited the south-west of Ireland. Both the Glaucous and the Iceland Gull have been repeatedly obtained in Kerry and Cork, and so has the Greenland Falcon. The coasts of western Munster are therefore quite within the occasional winter-range of Arctic stragglers, which probably come down the west coast. Other Gulls, supposed to have been of this species, have been observed in Ireland. The most circumstantial record of this sort was that of Neligan, who in January 1835 remarked a Gull, which was feeding in a field near Tralee, and which had plumage of an ivory tint and black legs. In some other cases the birds reported to have been of this species were probably Iceland Gulls.

THE GREAT SKUA *Megalestris chatarrhactes* (Linnæus)

Very rare visitor, chiefly in autumn.

The Great Skua has only occurred in Ireland as a straggler, though from the number of examples that Thompson was able to mention the bird seems to have been of more frequent occurrence in his time than it has been recently.

Only nine specimens are known to have been obtained which are mentioned below, though eleven others are said to have been observed, and in some of the latter cases the determination was no doubt correct. The distribution including these takes in the whole circuit of the Irish coast. The Great Skua has been obtained three times on Dublin Bay, and twice on Belfast Bay in the same season; it has also occurred on the west coast, having been obtained in Galway, Kerry and the west of Cork; while it is stated to have been twice observed off Dungarvan in co. Waterford. There is also an instance of a storm-driven bird that was found inland in co. Tipperary.

The first mentioned by Thompson was shot early in July, and others have been obtained in August, September, October and November. Thus, like other Skuas, this species has visited Irish shores in late summer and through the autumn, but not between November and July; so that there are no records of it in May or June, as there are of the three following species.

Kerry. - One obtained long since on Tralee Harbour is in the collection at Chute Hall.

Cork. - A specimen shot on Bantry Bay in the winter of 1845-46, was preserved by Lord Bantry (Thompson, III., p. 390).

Tipperary. - A Great Skua was picked up dead near Thurles in November 1894, and was preserved by Messrs. Williams & Son.

Dublin. - One was shot on Dublin Bay early in July 1833 (Thompson, III., p. 390). This specimen became the property of Watters, whose collection perished by fire. Another was found dead and emaciated on the shore near Portmamock in

November 1836 (Ibid.). A Great Skua was taken alive, apparently on Dublin Bay (Watters, p. 263).

A specimen, now in the Dublin Museum, was received from Clontarf on 1st October 1880 by Messrs. Williams & Son, who preserved it.

Galway. - An example, shot in this county in 1835, passed into the Trinity College Museum, Dublin (Thompson); and a Great Skua now bears the "Yarrell" label there.

Down. - Two were killed at one shot on Ballymacarrett Bank, Belfast Lough, early in August 1848; while another was obtained near Holywood on 18th September 1848 (Ibid.).

THE POMATORHINE SKUA. *Stercorarius pomatorhinus* (Temminck).

Scarce autumn-visitor in varying numbers May and the following months.

The Pomatorhine Skua occurs irregularly on all parts of the Irish coast; the localities where it has been most frequently noticed being co. Kerry, co. Dublin, Belfast Bay and Killala Bay, though this must be very much due to the presence of observers at the points named. The bird doubtless ranges freely round Ireland, for it has

been met with in twelve maritime counties and also far out at sea. It has, moreover, occurred in the inland counties of Kildare, Westmeath, Roscommon and Galway; in the latter case on Lough Derg, where it was probably following the Shannon alley. The majority of those obtained were immature, but many have been in adult plumage.

In the remarkable migration of Pomatorhine and Richardson's Skuas which took place on the 22nd and 23rd October 1862, Mr. Warren observed successive flocks of the former species flying from Killala Bay up the Moy, towards the chain of lakes which leads to Galway Bay (thus avoiding the detour round western Connaught). On the 25th and following days J. C. Neligan and his brother observed Skuas of both species on Tralee Bay, where they remained until the storms abated that had preceded their appearance in both localities (*Zool.*, s. s., p. 4700 [1875], and *Irish Nat.*, 1896, p. 258). The above was the largest visitation of this species to Ireland on record, but in other years these birds have been obtained in very distant localities; as, for instance, in October and November 1890, in Dublin, Kildare and Mayo (several localities); in 1892, in Westmeath, Sligo and Mayo; in 1895, in Kerry (two localities), Wexford and Sligo; in 1899, near the Skelligs, off Kerry and on Cork Harbour. Some of these seasons have been particularly stormy, and an adult bird that was sent me by Dr. Burkitt from Belmullet in November 1890 had been found dead and its stomach was completely empty, having died of exposure and starvation.

The number of times this Skua has been recorded from the several counties is as follows:-

Kerry.....6	Wexford...1	Galway.....2	Antrim and
Cork.....3	Wicklow...1	Roscommon..1	Down.....6
Waterford...1	Dublin.....6	Mayo.....6	Donegal....3
	Kildare.....1	Sligo.....6	
	Westmeath.1		
Munster	10	Leinster	10
		Connaught	15
		Ulster	9

The months in which thirty-nine of these birds were recognized or captured were as follows:-

January.....-	April...- July.....1	October....18
February....-	May...3 August.....1	November...9
March.....-	June....1 September...2	December....4

There is no record for the first four months of the year, but there are three for May:- An immature bird shot off Erris Head by Mr. E. W. Holt; another found dead at Kiltorris, co. Donegal, the property of Mr. Steele Elliott; and a third obtained on Aranmore in the same county by a lightkeeper and preserved by him (Mr. H. M. Wallis). One was obtained at French Park, co. Roscommon, in June (Messrs. Williams & Son); Mr. Sheridan states that he shot one in Achill in July, while Dr. Burkitt preserved another that was killed on Tramore Bay, co. Waterford, in August. It will be seen that October is the principal month in which the Pomatorhine Skua visits Ireland, and that its occurrences diminish in November and December.

One of these birds was shot in co. Wexford while attempting to kill a chicken, and Thompson mentions another whose stomach contained a rat, fish-bones and feathers; while Watters tells of one which was found to have eaten a Gull.

Referring to the adult bird, Mr. Warren remarks: "When seen during flight, the tail of this Skua presents a very clumsy appearance, in contrast to the elegantly pointed tails of the smaller species. This is caused by the two elongated central tail-feathers being bluntly rounded at their ends and twisted for nearly half their length, almost at right angles to the plane of the short tail-feathers; so that in a side view the full breadth of the long feathers is shown, giving the tail that awkward appearance which so easily distinguishes the Pomatorhine Skua on the wing."

THE ARCTIC OR RICHARDSON'S SKUA.

crepidatus (J. F. Gmelin).

Stercorarius

A not unfrequent visitor in autumn, rare and uncertain in May and June

This is the species of Skua that visits Ireland most frequently and has been met with in the largest numbers on those rare occasions when a considerable migration movement has been observed. It has been recorded repeatedly from thirteen maritime counties round Ireland-viz., Kerry, Cork, Waterford, Wexford, Wicklow, Dublin, Louth, Down, Antrim, Donegal, Sligo, Mayo, and Galway; but sufficient materials do not exist for a comparative table illustrating its local distribution. The most numerous records are from Killala Bay, owing to Mr. Warren's long continued observations, and to the favourable position of that harbour. Arctic Skuas have been obtained inland, once in Kildare and once in Monaghan, and again by the Ron. R. E. Dillon in eastern Galway near Roscommon.

Mr. Warren states that these birds are sometimes observed by him on their journey to the north in spring, and that when they do appear they generally remain for some days about the Moy Estuary, chasing the Terns. In May 1877 the flights of the latter were very large and were accompanied by six Skuas, of which he shot three, and these all proved to be females, containing eggs up to the size of B shot. One of these birds was white beneath, one of the dark form and one intermediate in colouring. On 18th May 1890 an Arctic Skua was seen chasing the Terns on the Moy as above described, while on 18th May 1881 Mr. E. W. Holt shot one and saw several others in Donegal Bay, and on the 28th of the same month he saw another, quite close to him, in Dunfanaghy Harbour on the north coast of Donegal. To the above occurrences in May can be added instances that occurred in June, in which one was obtained in co. Cork and another in co. Louth; while a Skua has been seen in Duugarvan Bay chasing other birds in June, and another was observed pursued by Terns flying north ward up Lough Beg on 11th June 1894.

The Arctic Skua does not appear to have been noticed in July, but in August it reaches Ireland occasionally, becoming much more frequent in September and October, and again becoming very scarce in November. As a rule this and other Skuas appear along with those hosts of Gulls that assemble on our coasts when there are great shoals of fish in autumn.

Mr. Warren and his brother observed an unusual migration of this species on Killala Bay in October 1851. On the 8th of that month a flock of six and another of eight birds were seen passing at a great height from the direction of the bay across the country to the south-west. These were the precursors of large numbers that followed on the 15th and 16th. The weather had meantime become squally with heavy showers, which caused the birds to fly quite low. From eight A.M. to one o'clock on the 15th successive flocks, amounting in all to seventy-two birds, crossed Bartragh Island from the sea in the same south-west direction. On the morning of the 16th the flight still continued, the Skuas passing in small flocks, until about eleven o'clock upwards of a hundred birds had been seen. These were mostly dark immature birds, but a good many long-tailed adults were seen that had light-coloured throats and bellies. Some, from the fatigue of their migration-flight, rested occasionally on the water for a few minutes and then followed their companions. The numerous Gulls passed by the Skuas on both days were disregarded by them, as though the predatory impulses of these birds were overpowered by their anxiety to migrate.

Mr. E. H. Warren, during the succeeding four years that he resided on Bartragh, observed Skuas on their south-west course every October, but not in such numbers as in 1851.

On 18th September 1869, a bright calm day, Mr. Robert Warren again saw a flock of fifteen directing their flight to the south-west, but at such a height that he was just able to distinguish their long tails against the sky; and again on 3rd, October 1874 he saw small flocks flying in succession up the Moy River from the sea (*Zool.*, s. s., p. 4699 [1875]). All these, like the Pomatorhine Skuas observed in October 1862, were evidently engaged in crossing Connaught by the chain of lakes that leads to Galway Bay. After the latter event in October 1862 birds of both these species were noticed by Mr. J. C. Neligan to frequent Tralee Bay during the continuance of the storms that accompanied the migration, and he stated that for many years previously he had observed the Arctic Skuas off that coast in October, generally in a line from Kerry Head to Brandon Head.

It appears from the statement of Colonel Vernon that Skuas, presumably of this species, occasionally visit the western coast of Connaught in some numbers, for when he was at Killary Harhour about 1867-68 he observed many which had come up the harbour, and he shot several with long tail-feathers.

Taking the observations of one day as a single instance, forty-two occurrences of this bird took place thus:-

January.....-

April....-July.....-

October....15

February...-	May.....5	August.....5	November..1
March.....-	June.....3	September 13	December...-

As in the case of the last species, no record appears from January to April inclusive, but a large proportion of the Arctic Skuas seem to have visited this country in September and fewer in the last two months of the year; the autumn migration thus appearing to be earlier than that of the Pomatorhine Skua.

“Skua Gulls” are often mentioned in the Migration Reports, and are sometimes said to have been seen chasing other birds, in June, August, October, and November; but the species was un-described, so that none of these instances are enumerated above.

A statement made to Thompson that the nest of this Skua had been found on a small rocky islet off Achill was not substantiated by specimens and has never been corroborated since.

An instance of feeding otherwise than by robbing, Gulls of their prey occurred five miles from Newry, where a bird of this species was shot while following the plough and feeding on worms.

THE LONG-TAILED OR BUFFON'S SKUA. *Stercorarius*
parasiticus (Linnæus) .

Scarce and uncertain visitor appearing chiefly in autumn, less frequently in May and June

The Long-tailed Skua has occurred all round the coasts of Ireland, and exceptionally inland, in much the same way as the other species. Having no breeding-place in the British Islands its occurrences on the spring and autumn migrations depend on varying circumstances, such as stormy weather driving the bird inland, or an abundance of fish with Gulls and Terns to cater for it. The coasts of Ulster and northern Connaught seem to be oftener visited than other parts of Ireland.

The inland occurrences were as follows: - An immature bird, accompanied by another, was shot on the co. Waterford mountains near Clonmel on the 14th October 1881 by Mr. H. S. Boyd, as he was pursuing a flock of Golden Plover, and he was surprised to see the Skua pounce on them like a Falcon. There had been heavy gales previously. Another immature specimen was obtained near Edenderry, King's Co., on 20th October 1891; and a bird of this species was shot on the Slieve Bloom Mountains, Queen's Co., in 1890; sixty or seventy were seen migrating on the Shannon between Westmeath and Roscommon on 16th May 1862, as related below; while Messrs. Williams & Son received an adult specimen from Castlerea, co. Roscommon, in May 1892. Two have been shot in co. Armagh; one of them in October 1891, and the other, an immature bird, in August 1898.

The distribution of forty-one instances is here given:-

Kerry.....3	Wexford....2	Galway.....1	Annagh.....2
Waterford...2	Dublin.....3	Roscommon..2	Down.....6
King's Co....2	Mayo.....5	Antrim.....5	
	Queen's Co.1	Sligo.....2	Donegal....5
Munster 5	Leinster 8	Connaught 10	Ulster 18

A migration of Long-tailed Skuas on their northward spring journey is described in the Proceedings of the Dublin Natural History Society for the 7th February 1862. The occurrence took place on the Shannon on 16th May 1860, and was witnessed by Lieutenant J. R. Crane, of the 67th Regiment. He stated that the weather, which had been very stormy for some days, was so wild on this occasion, with hail-showers, that it was difficult to keep his boat clear of water. At Long Island, about five miles south of Athlone, three successive flocks of these Skuas, consisting of twenty or more in each flock, passed over him, following the course of the Shannon northward, and showing no disposition to alight. From his description of their long tails these birds were evidently adults, and Mr. Crane shot three of them. On the following day a Long-tailed Skua was killed out of a flock in co. Donegal. The nature of the weather probably determined the birds seen on the Shannon to avail themselves of the shelter of its course, a route which is used by other species oil migration.

The majority of the examples obtained in May and June have been adults, and have come chiefly from the North and West of Ireland; a few have occurred in August and September, and several of the latter also have been adults; but October is the chief month when this Skua, as well as its congeners, visits Ireland, and at that

time there are many immature individuals. Thompson mentions four of these birds in company, which were met with in Donegal in November, the only record for that month. The Dublin Museum possesses an immature specimen obtained by Mr. G. H. Kinahan on the south coast of Wexford on 2nd January 1875, and Thompson records one which was shot in a ploughed field near Tramore (on the same coast-line) on 1st March 1846. These last two are the only instances in which Skuas of any species appear to have been identified during the first quarter of the year.

In thirty-one cases the months have been recorded:-

January....1	April....-	July.....-	October....12
February.. -	May.....6	August.....3	November...1
March..... 1	June.....3	September. 4	December... -

One of these Skuas was shot in co. Mayo as it rose from the carcase of a horse, on which it had been feeding.

Order ALCÆ

Family ALCIDÆ

THE RAZORBILL

Alca torda, Linnæus.

Resident. Numerous in summer, but infrequent in winter.

The Razorbill is one of those species usually to be found where there are colonies of rock-birds round the coasts of Ireland, and its breeding-places are more numerous than those of the Guillemot, as it does not confine itself to such precipitous cliffs as the latter does. Multitudes of Razorbills breed on the cliffs of Moher in Clare, the Blaskets and Skelligs off Kerry, and the Bull Rock off co. Cork; and on the last this species is much more numerous than the Guillemot, as it seems to be on the coasts of that county generally, while it is the only Auk that breeds on the co. Waterford cliffs. The Saltees are the summer-resort of vast numbers, which to a great extent are intermixed with the Guillemots. Lambay and Ireland's Eye off co. Dublin are the only homes of the species reported from the east coast; but on the Antrim cliffs it is again found, and Rathlin Island is resorted to by countless numbers which exceed those of the Guillemots. On Horn Head in Donegal is one of the most extensive colonies in Ireland, and other breeding-places which may be named in that county are Tory Island. Aranmore, and Tormore. In co. Sligo there is one at Aughris Head. Along the tremendous cliffs of northern Mayo are many colonies, and there are others on the Bills and Clare Island; while the chief breeding-place off co. Galway is Inishmore, the largest of the Aran Islands. Scattered pairs and small groups of Razorbills may, however, be found on many parts of the coast where there is no special colony.

Razorbills sometimes begin to pay daily visits to their breeding-cliffs on the Skelligs as early as the end of February, and from the 10th to the 20th of March they take permanent possession of their rocky homes in the South, though this does not seem to take place until April in the North. Still, in March a great movement of Razorbills is observed off the Irish coasts. The first egg noticed on the Skelligs was seen on 9th May, but laying does not become general until late in that month; and from that time fresh eggs may be found through June, alongside newly-hatched young of other parents. Both old and young leave the rocks towards the end of July and betake themselves to the water, and after the first few days of August few are left at their breeding-resorts.

Mr. E. M'Carron, who availed himself of his opportunities as light-keeper to watch these birds on the Tearaght, writes: "The young are jostled all the way down to the sea by the old ones. If the young bird rests too long, the old one shoves it, and on it goes, rolling and tumbling, and falling sometimes down steep cliffs, but at last the sea is gained. The old bird wants to get the young off to sea, seems excited, swims round it, and right off before it a few yards, then returns and dives a few times round about it; at last it commences to peck and tug the young bird; but this is so stupid that it cannot understand, and hours are thus spent. At last the old bird dives down and comes up under the young one, which is nicely poised on its back. In this way the mother swims off to sea with its offspring, rising and falling with the heaving of the billows. On no occasion did I observe the young bird to fall off. Some of the young when they tumble into the water swim off to sea at once with the old ones, others are carried off by wind and tide, and young and old wander along for months. They do not gather in flocks as Puffins do, but go along in pairs" (*Irish Nat.*, 1899, p. 135).

From August to November these birds with their young are numerous off our shores, especially when the supply of fish is plentiful; and when a clamouring cloud of Gulls are pouncing on a shoal, the dark forms of Razorbills and Guillemots, which fish beneath the water, are constantly rising to the surface only to dive again the next moment.

In December great numbers of this species have been seen passing our southern lighthouses to the south or south-west, and throughout the winter the birds that are met with are chiefly young. Mr. M'Carron, speaking of his observations on the Tearaght in winter, says:- "As many as two or three hundred might be seen almost every day. It was generally in stormy weather that they came close to our island. They were then quite active and dived immediately. In fine weather they rested quietly on the water, but kept at a distance from the island." He found them equally common in winter at Mine Head, co. Waterford, up to the middle of February, and noticed them subsequently at the Copeland Islands and off Kingstown.

Mr. H. Blake Knox remarked the numbers of Razorbills decrease on Dublin Bay early in December. From that time until March they are scarce, as he states, and it is chiefly young birds that are met with. East winds and frosty weather bring them in.

Individuals still in immature plumage have been seen by Mr. M'Carron among the hundreds of breeding Razorbills; and one of the former, which he shot in June, was larger and heavier than the adult, and had the throat white. This indicates that the breeding plumage is not attained until the second year, and that the birds of the previous season make their appearance at the breeding-colonies only in exceptional cases.

Most Razorbills prefer to lay in the nooks and cavities of the cliff rather than on those open shelves and platforms which are chiefly used by Guillemots; but the eggs of both species may sometimes be found side by side. The Guillemots, however, are fond of hatching, in packs, while the Razorbill usually finds a den for itself, and sometimes lays apart from other birds, like the Black Guillemot.

Among the vast variety in the eggs of this species a green ground is very rarely found, but specimens occur of a purplish and of a coffee-coloured tint; while streaks or scrolls, though uncommon, are prevalent on some eggs.

The hatching bird is extremely determined in the defence of her home, and has been known not only to bite severely, but hold on to a dog until another intruder afforded her a fresh object to seize. The male usually fishes for the female, but is thought to take her place at times, the egg never if possible, being left exposed to the Herring-Gulls, which would carry it off at once.

Stragglers Razorbills have been met with on Lough Derg and Lough Neagh, and are occasionally blown to the most inland localities by storms, even in summer. In winter numbers are occasionally washed up or blown ashore along the coast in an emaciated and dying condition. This is probably the result of a scarcity of food combined with the fatigue of coping with the waves, under which these birds dive, coming momentarily to the surface to dive again.

THE GREAT AUK.

Alca impennis, Linnæus

This now extinct bird was once obtained, on the co. Waterford coast in May 1834.

The late Dr. Robert J. Burkitt, who preserved the above specimen, gave me notes in which he corrected some statements in Thompson's account of it. These corrections had previously been communicated to Mr. J. H. Gurney and mentioned by him (*Zool.*, s. s., p. 1449 [1868]). I have, moreover, been shown by David Hardy, now deceased, the spot where the capture occurred, close to the cliffs between Ballymacaw and Brownstown Head; it was not at the mouth of Waterford Harbour, but several miles further west. He referred to the bird spontaneously as a "Penguin," and said that it appeared to him to have a white ring round its eye (a slight mistake, but sufficiently near the truth to show that he remembered this Great Auk). After it had been observed by Hardy swimming about the locality, a fisherman named Kirby captured it without difficulty. It showed so little suspicion that sprats thrown to it enticed it near the boat, when it was taken in a landing-net, and appeared to be half starved. This was stated to have occurred, in May 1834, by Mr. Francis Davis of Waterford, who purchased it ten days afterwards and sent it to Mr. Jacob Goff, of Horetown, co. Wexford; where it was kept in captivity for four months. For some time it took no food, but potatoes and milk were then forced down its throat, after which it ate voraciously. It was fed chiefly on fish, which were swallowed entire, and trout were preferred to sea-fish. "This Auk stood very erect, was a very stately-looking bird, and had a habit of frequently shaking its head in a peculiar manner, more especially when any food was presented to it; thus, if a small trout was held up before it the bird would at once commence shaking its head." (This statement

Dr. Burkitt supplied as a correction of what Thompson said-that the bird stroked its head with its foot.) It was rather fierce, and seemed to have an aversion to water.

Its subsequent preservation resulted from a request made by the late Captain Spence, when on a visit to Horetown, that if the bird should die it might be presented to Dr. Burkitt. This took place, and the entry of the fact in Dr. Burkitt's collecting-book is as follows:- "September 7th, 1834, I obtained a young Penguin from Francis Davis, Esq., which was taken off Ballymacaw, and which I presented to the Museum of Trinity College, Dublin, 1844."

It was described as a young female, not in good plumage, and was cured with arsenical soap. It now stands under a glass shade in Trinity College Museum, and is the only known example in immature plumage, the white patch between the bill and eye being mottled with blackish-brown feathers. The measurements are given by Thompson. The bones were preserved by Dr. Burkitt and given with the skin to Dr. Ball, but nothing is known of them now.

Dr. Burkitt discredited the statement that appears in Thompson's work as to a second Great Auk having been procured about the same time, and he believed that it arose from a separate account of the above specimen and was due to the confusion of the names of Francis Davis, of Waterford, and of Robert Davis, of Clonmel (Thompson, III., pp. 238,239). Moreover, Stopford's communication to Harvey, made in 1844, which stated that one of these birds had been obtained on the strand at Castle Freke in a water-soaked condition, does not appear in Harvey's "Fauna of Cork," 1845.

Thompson was informed by H. Bell, a wildfowl shooter, that he saw two large birds of the size of Great Northern Divers, but, with much smaller wings and much more clumsy heads, on Belfast Lough on 23rd September 1845. These kept diving and went an extraordinary distance under water each time.

I have to thank Mr. Robert Patterson for the information that the late Robert Gage, of Rathlin, concluded his list of the birds of that island with the following note:- "In 1740 the Rev. John Gage purchased the island of Rathlin. He died in 1763, and though he did not reside in the island he occasionally visited it. A short paper in his handwriting was found many years ago, living an account of some of the birds which he had observed frequenting the island. As well as I can remember he mentioned a great number of 'Sea-pyots,' which I suppose included Puffins, Guillemots, Sea-Gulls, &c., and a large fowl bigger than a goose, which he supposed to be a Penguin."

Though the above paper is lost and the statement, conveyed through the memory of Mr. Gage, is open to criticism, still it is a remarkable coincidence that the first place in Ireland where the remains of the Great Auk have been found is White Park Bay, on the Antrim coast, not far from Rathlin. In the kitchen-middens of that place, Mr. Knowles, of Ballymena, found bones of *Alca impennis* associated with flint implements and flakes and shells of edible molluscs ("Proc. RI. Irish Academy," Vol. I., No.5, p. 625; Id., Vol. III., No.4, p. 654).

These Great Auk's bones were found partly by digging and partly were scattered on the surface and comprised: - Four right and six left humeri, two right and one left ulnæ, one radius, one metacarpal, two phalanges, two left coracoids, one right and two left scapulæ, one right tibia, one right femur; in all twenty-four bones. In one case the entire bones of a wing were found together (*Irish Nat.*, 1899, p. 4).

A similar discovery awaited me in co. Waterford, where among the sand-hills on Tramore Bay are extensive kitchen-middens, containing layers of shells of oysters and cockles with limpets, mussels and other shells, charcoal, burned stones (split from use as pot-boilers), and bones of domestic animals and fowls, with bones and horns of red deer. Among these objects, which were on the surface, my companions and I found in different places, seventeen bones of Great Auk, comprising eight coracoids, five humeri, one tibia, two metatarsals and one pelvic bone. In one case a right and a left humerus were found together. The coracoids, according to Dr. Gadow of Cambridge, who kindly determined the remains, represent at least six individual birds. A selection of these bones is in the Science and Art Museum, Dublin, and others are in the Museum of Zoology at Cambridge.

The above facts lead to the conclusion that the Great Auk was used for food by the people who created the kitchen-middens, and the inquiry will arise how they procured so many of these oceanic birds. This could have been easily done if breeding-places of the species existed in their vicinity, such as Rathlin might have afforded. On the Waterford coast there are no large islands, but not more than sixteen miles from Tramore Bay are the low Keeragh Islands, eminently suited for such a bird to breed on; and the incursions that the sea has made along the Waterford coast, removing two successive school-houses within my memory, may well have washed away any low flat island that existed in Tramore Bay. This locality is nearly as far south as the fifty-second degree of latitude, probably the most southern point at which the remains of the Great Auk have been found in Europe, and it is to be hoped that when more of the Irish coast is searched similar discoveries will be made elsewhere. I have, however, explored the sand-hills on the south and east coasts of Wexford without finding there any bones of this bird.

THE COMMON GUILLEMOT.

Uria troile (Linnæus).

Resident. Numerous in summer, but scarce and uncertain in mid-winter, when the majority migrate southward.

The Guillemot, like the Razorbill, breeds on all sides of Ireland where the cliffs are suitable, but it cannot be as numerous as the latter; for though it has many huge and dense colonies, this species does not extend itself over those tracts of cliff, nor is it found scattered along all parts of the coast, to which the Razor-bill commonly resorts. Even in some of the principal breeding-haunts of cliff-birds, as Rathlin and Horn Head, the Guillemot is considered less numerous than the Razorbill or the Puffin, and seems more restricted in the choice of its home.

The largest assemblage of Guillemots in Ireland is on the majestic limestone cliffs of Moher in Clare. These rise to 600 feet and their coast-line is indented, huge bastions affording points from which the next cliffs can be viewed. Their faces are stratified in bands of unequal durability, and have thus been worn into deep seams, leaving covered shelves and ledges, of which the vast bird-population takes ample advantage. This does not fall off at about 200 feet from the water, as at Horn Head, but covers the cliffs up to 500 feet. At this height the deeply-cut horizontal fissures are, packed with a dense multitude of hatching Guillemots, which it requires careful scrutiny to inspect from the next cliff-top. These birds with Kittiwakes occupy also to its very apex that remarkable pinnacle which rises from an isolated base to some 200 feet near O'Brien's Castle. Its sides are all ledged in the lines of stratification, which are carried round the angles and, as it tapers, form lines of prominence round its shaft. It seems as if designed to hold the greatest possible display of bird life. Loop Head, the southern point of Clare, has also remarkably fine cliffs teeming with Guillemots and their usual companions. In Kerry and Cork there are colonies along the coast, which, however, are far eclipsed by the vast multitudes that breed on the several groups of precipitous islands, the Blaskets, the Skelligs, and the Bull and Cow Rocks. The assemblage of Guillemots on the summit of the "Cow" is shown in the illustration, the Bull Rock appearing in the distance. The view is from a photograph presented by Mr. A. R. a. Newburgh.

Along the cliff-girt, coast of Waterford the Guillemot has no breeding-place, but there is a limited one between Hook Head and Fethard in Wexford, and on the South Saltee is a famous colony extending along the entire eastern side of the island and part of the western. Lambay Island, north of Dublin, is the only breeding-place I know of on the east coast. Countless numbers make Rathlin Island their breeding-haunt, one huge flat-topped stack called Doonmore being the site on which a marvellous host of Guillemots assemble. But the great breeding-place of the north of Ireland is Horn Head, a precipitous mountain whose cliffs, rising to 400 or 500 feet, extend for several miles, supporting all the way a vast multitude of sea-fowl partly composed of this species. A lofty perpendicular rock at the east



GUILLEMOTS BREEDING ON THE COW ROCK

The Bull Rock, a breeding station of the Gannet, in the distance. *Photograph by A.R.C. Newburgh*

end of Tory Island is covered with these birds. The next great colony is on Tormore, a huge pillar-like mass, off the western peninsula of Donegal. Aughris Head in Sligo is also frequented, and there are several colonies along the north coast of Mayo, though these seem diminutive compared to those of the Puffins. Parts of the Bills of Achill are crowded with Guillemots as well as other rock-birds, and the former also breed on Clare Island, on the western side of Inishark, and on the cliffs of Inishmore in the Aran Islands.

After betaking themselves to the sea in winter Guillemots reappear very early at their Kerry rock-stations, where they are observed in the end of January or beginning of February, but at first they only pay a visit of a few hours daily, landing in the night or in the early morning, and leaving again during the forenoon. They then

occupy their nesting-places more or less for three months before they lay. In the North they do not generally land until April, during which month a northward migration takes place on different parts of the coast. Eggs were said to have been seen on the Skelligs as early as the 9th of May, but though I have paid many visits to the Saltees I have never known Guillemots to lay there until the last week in May, when eggs of the Razorbill had been already laid at that time in greater numbers. Fresh eggs of Guillemots may be found through June and even in July, though the latter are probably second layings of birds whose first eggs have been destroyed. On 13th June I failed to find any young hatched, but on the 16th of that month they were coming out in all directions. From the middle of July onwards they leave the rocks, the old birds pushing their young over the cliffs, as I am informed by light-keepers. During the first week in August the last of them disappear from their nesting-places, and for about three months hosts of these birds follow the shoals of fish round the coasts, the young crying "willock" and the old ones "murr." Those sounds may be heard at a great distance when the sea is calm. In October a general southward and south-westward movement is observed from light-stations, and in December and most of January Guillemots are scarce, and chiefly seen on our south and south-west coasts.

When stormy weather has been of long continuance Guillemots and other Auks are sometimes washed up dead and dying on the shore, and occasional waifs have been found in inland localities both in summer and winter.

Guillemots chiefly lay on open shelves of rock or the tops of large stacks, where nests of Cormorants sometimes occupy the higher, points, and a crowd of the former birds sit between them; but a throng of this species sometimes fills an oven-like cavity in the cliff, where after wet weather I have seen water dripping on the birds and partly covering the floor where the eggs lay in it. The latter get completely covered in filth as incubation proceeds, and I have seen many cemented thereby to the rock. This may account for the exaggerated statement that the bird has the power of gluing them to the rock to keep them from falling off. The object is gained in some cases by the hatching bird simply holding her egg on, for I have seen Guillemots hatching on surfaces which inclined to the precipice. Such birds would only leave their eggs at the last moment and after uttering cries of distress, the immediate result being that the eggs rolled off and were lost. Even where the surface does not slope outwards, the parent birds are most careful to step free from their eggs before they take wing; and a sudden alarm, such as that caused by a shot produces a disastrous stampede in which the poor birds throw over showers of eggs in their panic. Many eggs are destroyed in the ordinary course of things. Thus when creeping among the undisturbed birds I have often heard eggs fall and many may be found broken or lying in pools or crevices where they have rolled. I have seen a Guillemot descend with miscalculated speed upon an egg and smash it and a Razorbill on which another egg had broken was perfectly yellow. The birds in hatching face the cliff or sit sideways, the pointed end of the egg being held between the legs and directed down the slope of the rock-surface so as to serve as an additional support. Cracked or dinged ones are not necessarily destroyed as the membrane within is very thick, but if the latter is ruptured another egg of the same pattern is laid close by. If the first egg is taken a similar one is laid in the same place; thus Mr. Cunningham, a light-keeper on the Skelligs, found a peculiar egg turned at one point." After he had taken the first and the second, the Guillemot deposited a third, all having the same malformation (Migration Report, 1895). The beautiful varieties of colouring must help each bird to distinguish her egg from others lying near, until they all become stained and soiled. Variations occur in the colouring of the eggs of Irish Guillemots similar to those which are found elsewhere. Eggs which have a decidedly blue ground are scarce and those whose colour inclines to red are still more so. I once found a specimen of a pale buff, the inferior portion of which was of a deep red-brown, as if blood had dried on it. Another has the whole surface of a rich purplish red-brown, with darker spots. The eggs of this species, like all others that are pear-shaped, rarely have a zone of dark colouring round the smaller end; and when this occurs the supposition is that the end in question is laid first. I have seen an example taken on the Saltees with a bright blue ground, and round the small end was a broad band of black.

There is considerable confusion in a great bird-colony. A desperate fight may sometimes be witnessed in which two Guillemots, holding on fiercely to one another, fall down fluttering to the base of the cliff. I have also seen eggs of Guillemots in the nests of Cormorants and Kittiwakes among the eggs of these birds, and I believe that the owners of the nest incubate the mixed clutches, and not the Guillemots, for I have noticed a Kittiwake chase away one of the latter from its nest.

The affection shown to the young is very great. I once disturbed a Guillemot which moved to the edge to take flight, when her newly-hatched little one set up a piteous, piping cry. The parent bird turned, uttered a gurgling sound, and waddled back to her nestling with wings uplifted in spite of my near presence. It has been remarked that, as in the case of other sea-birds, when the young are being fed, if a fish falls on the rock it is never picked up; a good sanitary rule, considering the filthy state of the surroundings.

The movements of the birds in a colony that are not hatching, presumably the males, are worth watching. Numbers will start off together and flap along the water down the creeks and gullies, or dive in concert, when

they can be seen swimming in a flock beneath the surface, using their wings in progression, which is not so rapid as might be supposed. When great waves are rolling in they will precipitate themselves into the surf, where they flap along, disappearing under the breakers, and reappear far out, where the waves become dotted with the birds riding on them.

The form called the Ringed Guillemot, which possesses a white ring round the eye and a white streak behind it, occurs in all the colonies of the species, though the percentage of such birds appears to be small. I should say that in my experience there is scarcely one Ringed Guillemot to fifty of the ordinary type. The individuals which exhibit that variation are never grouped together, like birds of a separate species, but are mingled with the general throng of other Guillemots.

I know of no ground for regarding the form referred to as being more than a colour-variation to which this species is subject.

THE BLACK GUILLEMOT *Uria grille* (Linnæus)

Resident, breeding in small numbers on rocky coasts round Ireland. Much more frequent in the North and West.

The Black Guillemot resorts in summer to most of the wilder and more rocky parts of our shores and islands, becoming frequent and even common on those which are washed by the open ocean; though the bird is by no means confined to the vicinity of lofty cliffs. It is partial to bays, and frequents low as well as precipitous islands and the bases of cliff-faces, provided it has quiet hiding-holes in which to lay. These are either in the fissures of the solid rock, or among the fallen masses, or again, under boulders and piles of large fragments near the level of the sea.

It is seldom seen in summer far from its nesting-place, and never in flocks. This is not a species that associates in great communities as the other Auks do, and, as a rule, one or more pairs only are met with in the same place; but where there is an unfrequented spot, affording numerous rock-fisures in contiguity to a great run of tide, quite a small colony of Black Guillemots make it their home. I have seen this to be the case on the outer side of Owey Island in Donegal, and Doulus Head in Kerry. Both those counties and their islands, as well as the coasts and islands of western Galway and Mayo, have innumerable breeding-places of this bird, which is found here and there along every suitable part of their rocky shores that is not occupied by a great assemblage of other cliff-birds. Thus I saw no Black Guillemots at the crowded cliffs of Moher in Clare, but a pair were swimming close to the flat, limestone platform of Crab Island, in the edges of which were fissures, on a low part of the neighbouring coast.

In the south this Guillemot nests in many places in the cliffs of western Cork, and in some similar localities in Waterford, a few pairs breeding near one another in some sequestered spots. The Saltees seem to be too much crowded with other birds, but I have seen eggs from Bray Head where a few pairs breed as others do at Ireland's Eye and Lambay, and possibly still at Howth and Wicklow Head. These are the only resorts of this bird known on the east coast, but others are found in Antrim, and several pairs were seen by Thompson about the southern extremity of Rathlin Island, which is low; though not among the cliffs which sea-fowl frequent on the north side. The same choice of a haunt has been noticed at Lambay.

Black Guillemots have been observed on the water near their cliff-haunts in co. Waterford as early as 28th February, though more usually at the beginning of April. They lay in May, and early eggs show signs of incubation by the 10th of that month, but fresh eggs as well as young nearly fledged have been found during the last week in May. A single egg is sometimes sat upon.

These birds generally choose nesting-places at no great elevation above the sea, and on some of the low, flat islands they lay under large boulders; but I have seen several fly out of fissures in cliffs at a considerable height, though never from the upper part of the precipice. In July these haunts are left, and the birds, still in the black plumage, arrive on harbours like Strangford Lough, not frequented for reproduction. On 20th August the Rev. W. S. Green saw on Valentia Harbour a pair of Black Guillemots accompanied by a full-grown young one which was able to fly. This corroborates the statement in Thompson, that they feed their young assiduously on the water, though it has been said that they desert them on leaving the nesting-place. Their food consists of small fish and crustaceans. During a visit in September to Roundstone, on the Connemara coast, Mr. Howard Saunders observed the water thickly sprinkled with Black Guillemots, then in their grey or winter plumage. In the winter months these birds are frequently obtained off our coasts, sometimes on tidal rivers, and they seem more inclined to remain about our shores than the Common Guillemot or Razorbill.

When approached on the water the Black Guillemot, instead of diving, sets its wings in rapid motion and runs along the surface; striking the water with its feet, much in the same way as a Coot or Moor-hen does, but more rapidly. It is very careful not to enter its nesting-place while under observation, and in this it differs from the Common Guillemot.

THE LITTLE AUK. *Mergulus alle* (Linnæus)

Scarce and irregular winter-visitor, occurring on all sides of Ireland.

The Little Auk, though it has occurred so often, seems in most cases to be driven to Irish shores rather than to visit them in the usual course of things. Its appearance generally follows stormy weather, and birds of this species have repeatedly been found carried by tempests into the heart of the country; while some have been taken alive. In those winters when many Little Auks have occurred in Great Britain, others have visited Ireland. Thus in October 1841 examples were obtained in Kilkenny, Queen's Co. and Dublin. In November 1893 and the following months of that winter others occurred in Mayo, Sligo, Fermanagh, Donegal, Londonderry, Antrim and Down; doubtless in consequence of the gales which caused such disastrous effects (Mr. J. H. Gurney, in *Zool.*, 1894, p. 90). Again in January 1895, when numbers appeared on the shores of Great Britain, Little Auks were obtained in Antrim, Londonderry, Donegal and Leitrim, and in the following May the remains of one were sent to Mr. Barrington from Tory Island.

As a rule the birds obtained in Ireland have been single individuals, but occasionally three or four have been found together. Mr. Warren has on several occasions picked up these birds or their remains when they had been driven ashore on the Sligo coast by gales, and many similar instances have occurred both on the sea-shore and inland. Instances of the latter sort took place twice on the Shannon, twice on Lough Erne, and twice on Lough

Neagh, and three of these cases cannot be assigned to the following list owing to uncertainty as to the counties:-

Kerry.....3	Kilkenny.....2	Galway.....2	Fermanagh...2
Cork.....8	Wexford.....8	Mayo.....2	Tyrone.....1
Waterford...3	Queen's Co...1	Sligo.....7	Down.....8
Tipperary...1	Dublin.....5	Leitrim.....1	Antrim.....7
	Louth.....1		Londonderry.8
	Westmeath..1		Donegal.....5
Munster	Leinster	Connaught	Ulster
10	13	12	21

It appears that the Little Auk is obtained in all quarters of Ireland, most frequently in the northern province; but the above list, like others of the sort in this work, can only be taken as an illustration of the distribution of the bird, and is necessarily very incomplete. Harvey mentioned that this species is seen not infrequently on Cork Harbour and also on Clew Bay, and Sinclair made a similar remark as to Donegal Bay; so that many cases occur of which no particulars are kept.

The months in which forty-four cases occurred are here given:-

January.....18	April.....-	July.....-	October.....5
February ...-	May.....2	August.....-	November..11
March.....1	June.....-	September.-	December..12

The March instance was recorded by Mr. McCarron, who reported that he saw a little Auk at Mine Head. Thompson mentions one in summer plumage, obtained in Ulster on 22nd May 1846, and the other instance given for May is of the remains of a bird sent to Mr. Barrington, which may have died before that month.

It will be seen from the above that this species is a winter rather than an autumn-visitor, and the absence of any records for February points to its early departure when the days begin to lengthen. The suggestion that it may breed on any part of the Irish coast has no evidence to support it.

THE PUFFIN. *Fratercula arctica* (Linnæus).

Resident, and probably increasing, but rare in winter, when the great majority depart.

The winter departure of the Puffin is more marked than that of the Razorbill or Guillemot, and A. G. More preferred to call this bird a summer-visitor; but as a few, chiefly storm-driven individuals, occur in winter, the species cannot be said to be absent at any season.

It is more local than the other Auks, though no other bird has larger colonies than those which are to be found in some of the Puffin's principal haunts. The limestone cliffs of Moher do not lend themselves well to its habits, though great numbers breed on a turf-covered spur called the Monastery, and on a broken bank between the upper and lower cliff near it. The Blaskets and Skelligs off Kerry are inhabited by hosts of Puffins and, perhaps to a greater degree, Puffin Island, which though lofty and precipitous, has a great extent of peat-covered slopes in which innumerable Puffins, besides Shearwaters and Petrels, have their burrows. The Bull Rock and High Island are breeding-places belonging to Cork, and few, if any, of the above birds nest on the Waterford coast. The Saltees, however, contain an enormous colony of Puffins, which must number many thousands, and they seem to be increasing there, as they have extended up a valley where Lesser Black-backed Gulls used to nest. On Lambay, the Puffin is a numerous breeding species, but it has no other resort on the east coast. On the north countless numbers resort to Rathlin Island, but by far the largest colony, possibly the largest in Ireland, is on Horn Head, where the slopes and broken parts are tenanted for miles by these birds. There are haunts on Tory Island and the north side of Aranmore, and a more considerable colony occupies the lofty Tormore, all on the Donegal coast. The greatest display of Puffins alone that I have seen is on the north coast of Mayo, where a series of enormous colonies extend between Belderg and Portacloy. The elevated island of Illanmaster, which is capped with green sod, contains such hosts of these birds that they come pouring out of their passages like a stream, and a great extent of the surrounding sea is thickly sprinkled over with them. The cliffs further west rise to 700 or 800 feet and form a most majestic coast-line; these are tenanted in places to the very top by myriads of Puffins, which far outnumber any other species to be seen there. The Bills off Achill, and Clare Island, hold much smaller colonies, but further south I know of none until the cliffs of Moher are reached.

Towards the end of March these birds make their appearance at the co. Kerry islands. Their landing is sometimes quite a spectacle, for Mr. Jeremiah Trant wrote from the Tearaght: - "On the 30th and 31st of March the Puffins swim round the rock in thousands; then on the 1st of April they all rise towards evening and fly round the rock in a circle. Many of them do not alight on that evening, but the next day they nearly all land." They return to the water before dark except when they are breeding (M'Carron).

Mr. H. C. Hart, when visiting Lambay on 19th March, found that the Puffins had already arrived on the island for several days. On Rathlin they do not land until about 1st April, though they are seen, as in Kerry during the latter part of March.

Eggs have been found plentifully on 5th May on the Saltees; this species, which enjoys the shelter of its burrow, being an earlier breeder than the Razorbill and Guillemot, birds that lay on the open rock. The period of incubation is stated by Yarrell to be a month, and this has been corroborated by the observation of Mr. M'Carron on the Tearaght. The eggs are not always hidden underground, for in the faces of clay cliffs on the Saltees, where intrusion from land is improbable, eggs are occasionally exposed to view, and on the crowded parts of the Little Skellig they are sometimes to be found on the bare rock. In some specimens streaks of brown and undershell grey are so pronounced as to suggest a reversion to a type like that of some Guillemots eggs.

When feeding its young a Puffin will bring half-a-dozen little fish held by their heads, the tails hanging down on each side of its beak; and this suggests that the bird has the power of holding several while it continues to catch others. The young do not begin to appear at the entrances of their burrows until they are fledged, and when they do; many are seized by the Peregrine, which is a usual neighbour of a large bird-colony.

The departure for the water begins about the middle of July and takes place chiefly at night or at daybreak, when the young go tumbling and rolling down to the sea, and they then quit the vicinity of their breeding-haunts (M'Carron). The movement is at its height about 1st August, and by the middle of that month all the Puffins have left the land. After fishing off the coasts for several weeks, multitudes are seen passing away south for days in October and November. Eagle Island, Mayo, is thus passed by vast flocks probably from North Mayo and the Donegal stations

During winter these birds leave us, though occasional examples are met with, not only on the coast, but sometimes inland, where storms have driven them. Indeed, many, if not most, of the winter Puffins are driven ashore by violent gales, and young birds of the year are specially liable to this fate.

In summer, too, some have been found far inland. Thus Mr. Kane relates that early in June 1893 a man in his employment, near Monaghan, brought him a live Puffin in a state of starvation which had walked into his cottage with his ducks.

A white example has been seen at Horn Head, and I have observed another whose back was white though its wings were black, among the flocks flying round their haunts in Mayo.



The photograph which is here reproduced exhibits one of the breeding-grounds of these birds on the Saltees, and was taken by Mr. C. Kearton, to whom I am indebted for it.

Order PYGOPODES.

Family COLYMBIDÆ.

THE GREAT NORTHERN DIVER. *Colymbus ylacialis*, Linnaeus.

Regular winter-visitor.

The Great Northern Diver, though not a numerous species, occurs on all parts of the Irish coast, but more commonly on the north and west. It frequents the bays, often in pairs, and is wont to take up a particular beat on its arrival, which it uses as its fishing-ground for the season. A large proportion of those met with on our shores are immature birds. Mr. H. Blake Knox, who found this species numerous off the Dublin coast in the winter of 1866-67, stated that of forty-three examined, twenty-nine were young in their first winter, the rest in second, third or adult winter plumage; but it should be remembered that the young are more easily approached and oftener killed.

These birds are commonly found on Bantry Bay, Kenmare River, Dingle Bay, Blacksod, Killala and Donegal Bays and Lough Swilly, frequenting the latter as far up as Inch. For a bird of marine habits it is remarkable how often this Diver has occurred in inland localities. It has been taken on the Lower Lake, Killarney, Loughs Derg, Corrib, Mask, and Erne, as well as on the lakes of Westmeath and inland waters of smaller extent in several parts of Ireland. It has also been obtained far from water, in several instances; thus one was found in a yard in Tullamore on 1st October 1883. Some of these birds, no doubt, may have been driven inland by storms; but Mr. Bloomfield informed me that he observed one at the western end of Lough Erne for weeks in the autumn of 1893, the first he ever saw on that lake. Mr. W. H. Good also states that this species appears occasionally on Lough Corrib in hard winters.

Northern Divers arrive in October, when the adults are then generally in moult, but specimens have been obtained in that month in perfect summer plumage. They remain on Irish coasts generally until April or May, when the full nuptial dress has been assumed by the adults; and in the North-West they may be observed late in the season gathering into small parties previous to their departure. Mr. Warren observed ten together on Killala Bay on 24th May 1851, and nine of these were in adult summer plumage. Many have been seen on Broadhaven in April, in flocks of five or six, and numbers of these birds continue to pass into that bay through Achill Sound as late as the end of May and the beginning of June; while this species is said to be occasionally seen in summer at Achill and in co. Donegal. Even in July and August instances have been recorded; thus Sir William

Paul obtained an adult bird at Wexford, in July 1899, which he sent to Mr. J. H. Gurney, and Messrs. Williams & Son received specimens from the counties of Cavan and Donegal on 1st July in two different years.

Dr. Kane, who lived north of Dingle Bay, said that Divers frequent the mouths of the rivers and feed on the fry, which run in the spring months. The Great Northern Diver feeds chiefly on fish, and takes flat fish from the sandy bottom. It also swallows the bodies of crabs, as well as large molluscs.

This bird has the power of floating high upon the water when it is resting and enjoying repose, or of sinking itself so as to show little but the head and neck. It can also dive so rapidly as to evade a shot, and when alarmed it has the habit of changing its course so as to reappear in a different direction from that in which it had dived. Sir R. Payne-Gallwey has timed an immersion at ten minutes, but when fishing, the bird comes to the surface at much briefer intervals. The above writer relates that he has several times seen Northern Divers stranded among the shallows of Tralee Bay, where they had been left by the receding tide. Such birds were observed to sit bolt upright, the head and bill pointing upwards; but when approached they flapped away like Cormorants taking flight. In this manner, too, they sometimes take wing along the surface of the water, and the flight is powerful, but low. They seem, however, to be unable to take flight from land, and when there, are very helpless, though the bill may be used to make a dangerous dart at an enemy.

Divers of this species are frequently caught in nets while pursuing their prey beneath the water, and many such may be obtained from fishermen, though the adult birds are less frequently taken in this way than the young.

THE BLACK-THROATED DIVER. *Colymbus arcticus*,
Linnaeus.

Rare winter-visitor. About twenty-five examples have been recorded.

The Black-throated Diver is much the rarest of the three species in Ireland, but it is probably of more frequent occurrence than is supposed, for Mr. H. Blake Knox, who has devoted special attention to the Divers, has met with it in several instances on Dublin Bay, where Cox and Watters also recorded it. It is very liable to be overlooked from its likeness to the other Divers, especially in immature plumage.

Like the last species, this bird has occurred on all sides of Ireland, and has been obtained in the counties of Kerry, Waterford, Dublin, Louth, Antrim, Donegal, and Mayo. It has also been killed inland in Queen's Co., Meath, Roscommon, and once or twice on Lough Neagh. The example preserved at Granston, Queen's Co., had remained some time on the lake there before it was shot.

October is the earliest autumn month in which we have a record of the Black-throated Diver, and it appears to have been obtained or identified in each succeeding month through the winter and spring until May. In the latter month, Cox saw one in summer plumage, and others have been seen with the black throat in April.

THE RED-THROATED DIVER. *Colymbus septentrionalis*.
Linnaeus.

Bred until 1896 in one locality in the North. Common during winter round Ireland.

The Red-throated Diver was unfortunately announced in print to breed in Ireland, and the locality was named. The result was that for a number of years both first and second clutches were taken for collectors. Two pairs of these Divers were found to lay in the district, as three clutches, six eggs, were obtained in 1886. No other nesting-locality is known in Ireland.

The species is common and widely distributed on the Irish coast in winter. It sometimes appears in September, more commonly in October, and frequents our shores through the winter months, becoming scarcer in spring; but it is occasionally seen as late as the early part of May. Adults that have not lost the red throat occur in September and October, and this summer dress is assumed very early in spring; the throat turns dark even in January, and by the end of February the red patch has been found perfect. Comparatively few, however, are shot in this stage, the adults being very wary, and immature individuals are much more commonly obtained. Mr. Warren has observed these Divers to congregate together before leaving in spring, and he found a starved bird, recently dead, on the Sligo coast on 24th July 1890, which was in full summer plumage. Among

the inland localities where specimens have been taken I may mention Lough Derg, Parsonstown and Castleblayney.

Mr. Warren states that he has not found this species so constant to its feeding-grounds as the Great Northern Diver, being far more restless, and he has often seen it flying up and down the tidal channels; while Professor Leebody has killed it on the wing when flight-shooting, and Poole once pursued a Red-throated Diver up a long, narrow channel, but it took wing long before he came within shot of it. These birds cannot rise from the land, and with difficulty from a calm sea, but rough water facilitates their taking flight. This they are slow to do when gorged with fish, of which they swallow a great deal, but when alarmed they will "throw out ballast," and after they have taken wing the rejected sprats may be found strewn on the surface ("Fowler in Ireland"). When flying, the neck is held straight out in a stiff, ungainly manner, like the neck of a long bottle, and the discordant cry is uttered on the wing. Thompson's attention has been attracted to this sound when uttered by a flock of five or six flying southward at a considerable height in October, and similar flocks were seen taking the same course until the end of the month.

When alarmed, they sometimes take flight without diving; at other times they escape under water at an amazing rate, merely rising for an instant occasionally to take breath, and gliding below again without a splash.

When resting itself on the surface of a calm sea this bird will float high and buoyantly on the water, rolling at times on the surface as if gently turned by a screw and heeling over, now on this side and now on that, occasionally even on its back, and stretching out one wing as if to balance itself. These attitudes, which are also assumed by the Great Northern Diver, might give an observer the idea that the bird was writhing in the agonies of death, instead of luxuriating in the sunshine.

The nesting-place of the Red-throated Diver in Ulster was beside a small mountain lake, the most elevated of a series of lakes, and more than three miles from the nearest bay. The waters did not escape from the little tarn by a regular stream, but overflowed through a quaking swamp. In this, among flowering bog-bean, the nesting-hollow was formed by scraping the peaty surface of a bank on the verge of the open water. The eggs were laid time after time in different spots round the little lake, usually in the last week in May, or at the beginning of June. The birds flew to sea to fish, returning at night, when they uttered their loud laughing cry; but when the female was hatching the male was generally on the lake. I saw the pair there after their nest had evidently been robbed, and they kept at that side of the lake, which was farthest from us. When the young were hatched, as I was told, the parent birds did not seem much to mind human observation, nor were they disposed to leave the place.

Family PODICIPEDIDÆ.

THE GREAT CRESTED GREBE.

Podiceps cristatus

(Linnaeus).

Resident, and breeds on numerous lakes from co. Clare to co. Antrim.

The Great Crested Grebe has probably quite as many nesting-localities in the Midlands of Ireland as it has, in proportion, in any other part of the United Kingdom. On the lakes of the Shannon Valley it breeds extensively, especially on Lough Ree; and Lough Erne is another favourite resort, each of the larger sheets of water harbouring several pairs. On many lakes from King's Co., through north central Ireland, to Down and Antrim, one or more pairs are to be found. Among these resorts may be mentioned Lough Annaghmore, L. Iron, and other West-meath lakes, L. Gowna, L. Sheelin and many small lakes in Cavan, Monaghan, Louth, Armagh, Down and Antrim. On Lough Neagh, and to some extent also on Portmore Lough, this species has certainly diminished since the time when the account given in "Yarrell" (4th Ed.) was written. In Connaught I have seen the bird in June on a lake west of Tuam, and it breeds on Lough Key in Roscomnion, and Loughs Gara, Arrow and Gill in Sligo. Further west I have failed to trace it, and it does not appear to nest on the great lakes of Corrib, Mask and Conn, nor on Loughs Allen and Melvin in Leitrim, though it occurs on some of these in winter. They have stony bottoms, are deficient in large reed-beds, and are subject to violent squalls from the adjacent mountains, causing formidable waves. This species does not appear to breed south of Lough Derg, though it is said to be found on the Killarney Lakes in winter.

Mr. Parker finds the Great Crested Grebe a resident on Lough Derg, as it is on the Shannon lakes, on those of Westmeath, and on Lough Erne; but in winter it leaves many of the smaller pieces of water on which it breeds, especially in the North of Ireland. Thus the Rev. A. Ellison remarked its disappearance from its haunts

in co. Down from November to March. In winter many betake themselves to tidal water and are shot on bays and estuaries round Ireland, but rarely on the coasts of Connaught. Sir R. Payne-Gallwey says that certain spots are frequented throughout that season by pairs, and sometimes by single birds. Many have been observed in January in Dundalk Bay, a convenient winter-resort for those which breed in the neighbouring counties; but others travel further and visit the coasts of Kerry, Cork, Waterford, and Wexford, immature birds being frequently obtained in these southern localities.

The Great Crested Grebe can generally be distinguished far off upon the water by its tall, slender neck showing white in front, and by the garniture of its quaint-looking head; while its body is kept almost under water. The quiet way that it sinks below the surface without leap or splash is characteristic of it even more than of the Divers; and its croak, though not loud, can be heard at a long distance, This is quite different from the alarm-note, which resembles "kek, kek." When resting at ease, however, its body-plumage is puffed out so that the bird resembles a Coot in shape, and its head is drawn back, resting between its shoulders; while the beak is buried in the feathers on one side of the neck. On

Lough Iron, where the Grebes show little fear, I have more than once seen them take flight when approached, instead of diving. On the wing they look not unlike Mergansers, but the large feet, stretched out behind, are peculiar. A Grebe that does not suspect it is watched performs various pretty actions; with its body well over the water it will swim rapidly in one direction, dip its bill, and swim as fast in another direction, possibly in pursuit of May-flies on the surface. Its behaviour in the nesting-season is more confiding than at other times. A pair will approach each other with their necks held up and crests erected, all the while uttering their croak. Having met, they remain in that attitude, with the points of their bills touching each other. After some moments they lower their heads simultaneously until their bills touch their breasts, and then they renew the manoeuvre, setting to one another like partners in a quadrille; or one dives and the other follows it. At other times they swim or rest on the water side by side (Mr. Kane, in Field, 4th March 1893).

Several pairs will sometimes nest in a quiet reed-bed-for instance, in a sequestered lagoon where the water is covered with a plentiful growth of tan rushes. I have found the nests composed of decayed rushes with some finer pond-weed to cover the eggs; but the Rev. A. Ellison describes a nest which was a large mass of rotten sticks matted together with decayed rubbish and lined with aquatic weeds and old wet leaves.

The eggs are laid in May or June, but are to be found up to the end of July; and, if the first clutches are taken, second sets may not be hatched until September. Mr. G. D. Beresford informed me that at Castle Dillon the male bird carried the young for at least ten days on his back, while the female dived and brought them food. This habit of carrying the young has been observed by many, and Sir R. Payne-Gallwey states that he shot a Great Crested Grebe flying, when two young ones dropped from their parent upon the water. A Grebe of this species will swallow a fish so large that its slender throat is distended, and looks like a goiter (Mr. Kane), and young ones have been found to have choked themselves in this way. The singular propensity of these birds to swallow their own feathers has been described by Thompson, who found these substances, together with fish-bones, in considerable quantities in the stomachs of several Grebes which he examined.

THE RED-NECKED GREBE. *Podiceps griseigena* (Boddaert)

Rare and accidental winter-visitor.

The Red-necked Grebe, which is the rarest of its family, has been obtained in about ten instances: - On Bantry Bay; near Waterford; on the coast of Leinster; on Belfast Lough; and on Inver Bay in western Donegal; while an example was said to have been got on the Shannon. (By this expression the estuary of that river may have been meant.) The bird has therefore occurred on most parts of the Irish coast, though it has not been recorded from Connaught.

In the majority of the above cases the birds were immature; and in seven instances the months of occurrence were December (2), January (2), and February (3). Thompson's first record was of a bird said to have been obtained late in the autumn.

Cork. - One was shot at the mouth of the Glengarriff River, Bantry Bay, in December 1842 (Thompson, Ill., p. 184); a bird of the second year was also shot on Bantry Bay on 26th December 1850, and is in the Queen's College Museum, Cork.

Waterford. - An immature male was taken about two miles inland from Tramore Bay, and brought to Dr. Burkitt on 25th January 1854. He preserved it in his collection.

Wexford or Wicklow. - An immature female was taken on the coast on 24th February 1838, and was

preserved in the collection of T. W. Warren, of Dublin (Thompson).

Dublin. - An immature bird was shot on Sandymount Marsh, Dublin Bay, on 24th January 1848, and was in Watters' collection (Ibid.).

Down or Antrim. - Another immature bird was obtained late in the autumn of 1831 on the coast of co. Down (Ibid.); a female was shot on Belfast Lough on 23rd February 1850 (Ibid.), and is still in the Belfast Museum.

Donegal. - A bird obtained on Inver Bay by Mr. A. R. Wallace is in the Dublin Museum, having

been received on 23rd November 1887, but had probably been killed some years before that.

Shannon. - An adult male is said to have been shot on the Shannon about the end of February 1865, and to have been sent to Glennon for preservation. The edge of the lower mandible was brilliant yellow, and the bird was not more than two thirds as large as the Great Crested Grebe, and had the neck much shorter in proportion (Field, 11th March 1865).

THE SLAVONIAN OR HORNED GREBE. *Podiceps auritus*
(Linnæus).

Winter-visitor. Frequent on the North and North-West coasts; rare in the South.

The Slavonian Grebe is the commonest of the three species which do not breed in Ireland, and is usually found singly or in pairs in winter on Lough Swilly in Donegal, and Blacksod Bay in Mayo; while Belfast Lough and Killala Bay afford a series of records. There are six notices of the bird from Kerry, but other southern counties have only one each; and Mr. Newburgh, who lived on Bantry Bay, remarked that he had never met with it there, though he had observed it every winter in which he had been, shooting on Blacksod Bay. It has been obtained in all the maritime counties, except perhaps Clare and Galway (from which it has not been announced); but though most frequently occurring on tidal water, it has been killed in at least six inland counties, chiefly on lakes; and four such instances took place on Lough Neagh.

The Slavonian Grebe has not been noticed in July or August, but from September onwards through the winter the notices of it increase up to February, when nearly twice as many of these birds have occurred as in any other month. The numbers of instances that can be cited for the several months are the following:-

January....7	April...2	July.....-	October....3
February..13	May: ..1	August.-	November..4
March.....3	June. ..1	September.2	December....5

The greater number of individuals obtained have been in the immature plumage, in which this bird has been called the Dusky Grebe, but a few in adult summer dress have been procured in spring. Two fine examples with the golden tufts on the head were sent to Mr. Barrington from Blacksod Bay on 14th April 1895, having been shot there out of a small flock of six. Professor Leebody saw a pair in breeding-plumage on Lough Swilly in April 1893, and Mr. Campbell obtained a male in the same stage, which was found dead on Lough Foyle in June 1893.

The fondness of the Slavonian Grebe for bays and estuaries is a marked feature in its habits, and its occurrences on fresh water, especially on Lough Neagh, have been too often repeated to be the mere result of storms or accidents.

Thompson remarks that examples of this species, as well as of the Red-necked and Eared Grebes, were obtained both in the North and South of Ireland in the winter of 1837-38, a season in which the Duck family were unusually plentiful.

THE BLACK-NECKED OR EARED GREBE. *Podiceps nigricollis*, C. L. Brehm.

Rare and accidental winter-visitor. Has been obtained twice in June.

This is one of the rarer Grebes, and only twenty-one records of it can be cited, as against forty-nine of the last species; there is, moreover, no part of Ireland where the Eared Grebe is said to occur annually, as the Slavonian does on Lough Swilly. The specified instances show that the species we are considering has occurred more frequently in proportion in the South, East and North-East, and more rarely in the North and North-West than the Slavonian Grebe. Otherwise the distribution and season of occurrence of the two species is singularly similar, considering that this is a southern species and that the other breeds so far to the north of these islands.

Both birds occur chiefly on tidal water, but have also been repeatedly obtained far inland; on the Shannon, the midlands of Leinster, in co. Armagh, and on Lough Neagh.

The twenty-one cases cited have occurred in the following counties: -

Kerry.....1	Wexford.....2	Mayo.....1	Armagh2
Cork.....4	Wicklow.....1		Down & Antrim.3
Waterford..1	Dublin.....1		Donegal.....1
	Louth.....1		
	Westmeath.....3		

Munster 6	Leinster 8	Connaught 1	Ulster 6

The only instances recorded from the western and north-western coasts are; one from Valentia, one from Killala Bay, and one from Killybegs in Donegal. This accords with the fact that this Grebe reaches Ireland from the East rather than from the North.

The months of occurrence are only given in the fifteen cases following: -

January.....1	April.....-	July.....-	October.....2
February....6	May.....-	August.....-	November...2
March.....-	June.....2	September.-	December....2

So far as these meagre figures go they show that the Eared Grebe usually visits Ireland from October to February, and is found most frequently in the latter month, but that it has also been twice recorded in June. In both these cases the birds were in full summer plumage, and so is a specimen in the Dublin Museum, which is simply labelled "Ireland."

Kerry. - One was received from Valentia on 1st March 1899 by Messrs. Williams & Son.

Cork. - An immature bird, now in Queen's College Museum, Cork, was shot in Muskerry Barony in 1847 (Thompson, III., p. 190); one was preserved by Mr. Rohu in the severe winter of 1878-79, for Mr. Jackson of Ahensky; one in the collection of Sir R. Payne-Gallwey was shot by him in Queenstown Harbour in December 1878, and he informed me that he had shot two or three others there at different times.

Waterford. - I received an example from Dungarvan Bay on 22nd February 1890, which is now in the Dublin Museum.

Wexford. - Several were said to have been obtained in co. Wexford on 24th February 1838 (Thompson, III., p. 190); another was received by

Messrs. Williams & Son from Enniscorthy, on 16th February 1895.

Wicklow. - A specimen was sent for preservation to Messrs. Williams & Son from Enniskerry, in October 1899.

Dublin. - An adult in full nuptial plumage was shot near Dublin on 15th June 1847, and was preserved in Watters' collection (Thompson, ill., p. 190).

Louth. - A female or immature male was obtained on the coast near Dundalk on 13th December 1856 by the late Lord Clermont (Proc. Dublin N.H. Society, 23rd January 1857).

Westmeath. - Two were obtained in 1863 by Captain Ingham, who was then stationed at Athlone (Ibid., 1st April 1864); one, killed on Lough Ennell, is in the Dublin Museum, but the date of its capture does not appear; another was

received for preservation from Westmeath by Messrs. Williams & Son in October 1899.

Mayo. - An immature specimen was shot by Mr. Warren in the Moyne Channel, Killala Bay, on 6th February 1852, and the fact that this species has only once occurred to so careful an observer in that great harbour of refuge shows how rare it is on the coast of Connaught.

Armagh. - A specimen in the Belfast Museum was procured on Lough Neagh in 1826; an Eared Grebe in summer plumage was shot near Benburb, on the borders of Armagh and Tyrone, early in June 1849, and was preserved by the Rev. G. Robinson (Thompson, III., p. 190).

Down and Antrim. - One was obtained in January or February 1835, when two young Slavonian Grebes were also killed (Ibid., p. 189); two males were obtained at one shot on 30th November 1816, after some severe frost and snow, and one of them is in the Belfast Museum (Ibid.); two more were killed in the same manner on 11th November 1817, and in each of these cases the locality was Belfast Lough (Ibid., p.190).

Donegal. - A bird of this species was shot while fishing at Killybegs on 6th February 1893, and is in the collection of Mr. Barrington.

The stomachs of some of those specimens examined by Thompson contained quantities of their own feathers, with the remains of fish, shrimps, and beetles.

THE LITTLE GREBE. *Podiceps fluvialis* (Tunstall).

Resident, common and generally distributed.

This bird, also well known as the Dabchick, breeds freely in every county in Ireland, and even on the larger islands of Achill and Rathlin. It is at home on the lakes of western Donegal, and breeds on those that are near the coast, as well as throughout the midland counties. It avails itself everywhere of the fresh waters in which Ireland so extensively abounds, while on the River Shannon and the great lakes through which it passes, the nests of the Little Grebe are innumerable. It seems to have no objection to brackish water, for it breeds on the intakes of the harbours of Wexford and Ballyteige in the south of that county, and is equally partial to ponds surrounded with trees and evergreens.

In winter, pairs which have bred on some of the smaller lakes and ponds leave them, and little parties, consisting probably of the old ones with their broods, are to be seen on tidal estuaries and the sheltered parts of bays round Ireland. That these birds travel on the wing round the coast at night is shown by the Little Grebes that have struck lighthouse lanterns. Mr. Barrington has received specimens thus killed in November and December at Hook Head in Wexford, Berehaven in western Cork, and Slyne Head; the latter being one of the remotest and most exposed points on the west coast of Connaught. Little Grebes also fly from one lake to another in winter, and I have seen a pair in January on a mountain pond, five hundred feet above the sea, which they do not frequent at other times.

The Dabchick progresses under water with great speed, and uses its wings, its head and neck being fully extended, and its large feet and webbed toes thrown backward alternately. The power of diving is immediately acquired by the nestling when hatched, for I have seen a little one, recently escaped from the shell, which took to the water on my approach, dived, and used both wings and legs under water. It soon came up and dived again, which disposes of the idea that the nestling cannot dive.

The nest does not float free except by accident, but is moored among stems, or rests upon submerged branches, or on the shallow bottom of the pond, and in one case I found the bird had built upon a cup-shaped stone. The structure is not large and flat at first, but more in the shape of a lump or little heap, the elevation of the centre indicating if there are eggs in it, even when the parent has covered them. The act of doing this is rapidly performed, for the weeds or rubbish are chucked over the eggs as quickly as possible, and the bird then dives out of sight. In a dry summer, when the water was low, a Dabchick had her nest in a shallow place in the centre of the Cappagh Lake. Whenever anyone appeared on the bank she covered her eggs and dived; I once approached a hatching bird of this species in the twilight, when she dived without attempting to cover them, being probably sensible that there was no need of this at night. When returning to the nest this bird will swim to it under water, and creep out when she reaches it.

The eggs are ordinarily laid in co. Waterford at the beginning of April, but I have seen others that were set upon in July and August, no doubt second clutches. Four is the usual number, but five are frequently found, and in rare cases six.

Order TUBINARES.

Family PROCELLARIIDÆ.

THE STORM-PETREL.

Procellaria pelagica, Linnæus.

Resident to some extent, but is very rare from January to March. Breeds on islands off the North and West coasts.

The Storm-Petrel breeds in great numbers off the Kerry coast, on the Skelligs, the Blaskets, Puffin Island, and Scariff. Mr. M'Carron on the Tearaght has estimated the Petrels there at several thousands; while another light-keeper informed me in 1891 that 276 of their eggs had unfortunately been taken that season on a neighbouring island. The bird and egg has been obtained on an island off the Cork coast, and though there is no record from the Saltees, where I have searched for Storm-Petrels in vain, still they are so often seen during the summer months at the neighbouring Coningbeg lightship that it is hard to believe they do not nest in that vicinity. On the eastern coast no haunt of this bird is known, but in Clare Storm-Petrels have been taken with their eggs on Mutton Island, as well as on Croaghnaakeela (Deer Island), and High Island off western Galway. On the Mayo coast, Black Rock, and several other islands north of Achill are breeding-resorts, and Mr. Richards has found the nest on the cliffs of the coast quite near Belmullet, Eggs have been also taken on Pig Island and Illianmaster, on the north of Mayo. Numbers of these birds lay on Rathlin O'Birne, Roaninish, and Tory Island off Donegal; and two small islands off the north coast of Antrim are also resorted to. It is probable that several other breeding-places of the Storm-Petrel exist round Ireland, but the nocturnal and subterranean habits of the bird when on land make it difficult to be discovered.

Storm-Petrels are seldom observed at their rocky homes before May, but they were noticed in holes on the Great Skellig on 21st April 1885 (Migration Reports). I have received an egg from the Skelligs marked 28th May, and Mr. Turle obtained a good many on the Blaskets the last week in that month. In Donegal I saw the adult birds taken from their burrows on Roaninish on 1st June, but they had not then laid, so that they are probably later there than in Kerry. Both the birds may be found in the same burrow before laying has commenced. As June advances the numbers of eggs increase; many are laid in July, and Seebohm found both eggs and young on 17th September. It has been stated that there is a second laying in the season, but Mr. Ryan, living on the Tearaght, wrote to me on 10th October, saying: "The Stormy Petrels take a long time to get fledged. I am watching one that was hatched in July, and it is not fledged yet."

The nesting-holes are often in the peaty sod, and are sometimes at a great height above the sea. On Tory Island Petrels breed on a grassy slope at the top of a cliff three hundred feet high, and I have seen them at various elevations, sometimes on low islands. Holes under boulders and crevices of all sorts are used. When ascending the Great Skellig to the cells of the ancient monks, we heard the note of a Petrel coming from under one of the stone steps, and this was continued while we endeavoured in vain to open up her hiding-place.

I have seen a few wiry stems that had been brought into the nesting-hollow, and this is occasionally lined with a little dry grass, but in another case the egg was simply laid in a little cavity scraped in the peat at the bottom of the burrow. If the first and second eggs are taken a third is laid. The eggs vary greatly in size from 1.2 x .9 to 1.01 x .78 and 1.1 x .66; and the zone of specks, which is absent in some, is very distinctly defined in others. This zone encircles some egg broadly, enclosing a cap of uncoloured shell; in other eggs it shrinks to the most tiny circle, and it sometimes coalesces into a round patch of specks at the very end of the egg. A Petrel, identified by having lost a foot, was found to resort to the flame hole year after year, so that these birds seem to be constant to their homes as so many others are. When taken out of their burrows they eject oil from the mouth, and not from the nostrils, and they are also said by light-keepers to vomit a half-digested white matter as well. They seem, on such occasions, very helpless, apparently unable to take wing on land, and only anxious to retreat again to their holes. At their breeding-haunts they usually lie within during the day, and issue forth in great numbers at night, and on dark wet nights they annoy the light-keepers by striking against the lanterns of the lighthouses, and leaving spots of oil on the glass, Mr. Gardiner, on the Skelligs, stated that he saw from sixty to eighty killed one dark, stormy night, by flying against the cliff where the lantern cast a dark shadow on the rock-face; and he found their bodies next morning.

Storm-Petrels, possibly the male birds, are, however, often to be seen on the wing in the daytime in considerable numbers, and Mr. William Sinclair, who resided every summer on Inver Bay, co. Donegal, saw them there so frequently that he considered their habits to be diurnal. When approaching the Skelligs from the

sea, after a dredging expedition with the Rev. W. S. Green, we came to the body of a large cetacean, on which five blue sharks were feeding. All around this spot were numbers of Storm-Petrels on the wing in full daylight, as though they were desirous of picking up morsels of the carcase or oily matter.

These birds are said by Mr. M'Carron to utter a continuous chain of articulations, or a kind of "churr" according to Mr. Barrington. The noise is kept up by those in holes, as well as by those on the wing, and may be heard on a calm night at a distance of a hundred yards, On the Tearaght Mr. M'Carron says they are to be heard in every bank, under every rock and in every crevice (Migration Reports).

In October both old and young are met with on the wing off the coasts. They diminish in November and December, and after that are very rarely seen until their return in March or April. They are liable; however, to be blown inland at any time by violent storms, and Thompson gives various localities where Petrels were found on the occasion of the memorable storm of 7th January 1839, which strewed these birds right across Ireland. A similar occurrence took place in September 1891, when so many Petrels of this and the Fork-tailed species were blown over the country. Instances in which Storm-Petrels have been found after gales in inland places are too numerous to be recounted, and they seem to have occurred in all parts of the island. Among these cases may be included the occasional visits of Storm-Petrels to Lough Derg, Lough Neagh, and other lakes.

LEACH'S FORK-TAILED PETREL. *Oceanodroma leucorhoa*
(Vieillot).

Chiefly known as an accidental visitor, but a few pairs have been found breeding in Kerry and Mayo.

Thompson mentioned a statement that a Petrel with a forked tail bred on islets near Slyne Head, co. Galway, but discredited it, as the egg was described to be speckled like a Sparrow's. There has been no confirmation of this statement, which at present is valueless, though its improbability has been greatly reduced by the finding of the eggs of the Fork-tailed Petrel in the following localities, further north as well as further south than Slyne Head: -

In 1886 I received from Mr. F. J. Ryan, then stationed on the Tearaght, an egg of this species taken on 1st July. It came with a few eggs of Storm-Petrel, and was pure white, measuring 1.27 x .94 inch (*Zool.*, 1886, p. 367). In 1887 Mr. Ryan found two Fork-tailed Petrels on their eggs on 21st and 23rd June respectively, one of which he sent to the Dublin Museum, and he forwarded the egg of the other to Mr. Barrington, who received another bird with its egg, taken on 6th July 1888 on the same island (Migration Reports). Though this species has not been found since then on the Tearaght, an egg was taken on the neighbouring island of Inishnabro by Mr. Turler on 20th May 1889 (*Ibis*, 1880, pp. 11 and 12). He gives its dimensions as 1.31 X .97 inch, which leaves no doubt as to the correctness of the determination.

On 13th August 1899 Mr. Barrington received another egg of this Petrel, much incubated, from an island off the coast of Mayo, from which birds taken in autumn had twice been sent to him before.

The above localities are some of the remotest rocks off the Irish coast, and there can be little doubt that the number of Fork-tailed Petrels that breed there are few in number. Mr. Ryan stated that the little nesting-hollows were thinly lined with grass.

This bird has been obtained as a straggler in twenty-six counties, half of which are inland; and out of more than a hundred specimens obtained at various times not more than one-third were met with in marine localities. In the great majority of instances the bird is blown inland or driven upon our shores by storms, and has been often picked up dead.

It has been obtained twice in January, but has not been recorded in February nor in March. In April two have been taken, in May one, in June two, and in August one, besides the breeding birds mentioned above; but September, October, and November witnessed storms that strewed these birds over Ireland; and for December there are seven records. On 20th November 1881 there was a terrible south-westerly gale, and during the week that followed Fork-tailed Petrels were met with in Galway, King's Co., Westmeath, Dublin and Londonderry. The birds were in an advanced state of moult, and their stomachs contained round, semi-transparent objects besides oily matter. Two of them were seen flying against the wind for several hours along the margin of a lake in Westmeath, and six were observed on the wing near Clontarf outside the railway culvert through which the tidal water escapes. There they hovered with their heads to the wind, tipping the water with their tiny black feet (A. Williams, in *Zool.*, 1882, p. 18).

The south-westerly storms of September 26th-30th and October 4th-14th 1891 proved far more disastrous than the former gale to this species, as well as to the Grey Phalarope, which also occurred in Ireland in unusual

numbers, and Wilson's Petrel was then recorded for the first time and in two instances; while other rare birds obtained in the North of Ireland at that time were Black Terns and Rollers. In England, besides Petrels and Shearwaters, three Sabine's Gulls were recorded (Saunders, in *Ibis*, 1892, pp. 182, 185). Fork-tailed Petrels were obtained at the time named in the eighteen counties of Kerry, Waterford, Clare, Limerick, Tipperary, Dublin, Kildare, Queen's Co., Westmeath, Galway, Mayo, Leitrim, Cavan, Down, Antrim, Londonderry, Tyrone and Donegal. It will be observed that no large portion of Ireland escaped this visitation except Southern Leinster. The Petrels were taken in different places from Galway town to the Shannon. A number were seen flying about the Shannon in the neighbourhood of Limerick on 27th September, coming, in their eagerness for food, close to the spectators, and at Banagher the birds were not only seen on the river, but in the town. Several occurred in each of the counties of Tipperary, Westmeath and Cavan, and others at Londonderry, on Lough Neagh, Belfast Lough, and in the adjoining districts, the northern localities being chiefly reached in October. A correspondent, who enclosed one to Dr. Scharff from Moy, co. Tyrone, stated that dozens were lying about that place.

It appears, therefore, that these birds were blown right across Ireland; but flocks, apparently of Fork-tailed Petrels, were still seen off the west coast in the middle of October. On the 14th of that month the light-keeper at the Skelligs stated that he saw about two hundred Petrels which were larger than the Storm-Petrel, in flocks of about twenty or thirty (Migration Reports). At the same time flocks of Petrels appeared on the coasts of Wexford, but two wings sent from Hook Head to Mr. Barrington proved to be those of *P. pelagica*.

Accounts of the Fork-tailed Petrels obtained in September and October 1891 are given in the *Zoologist* (1891, p. 469). The birds seem to have been all moulting and were emaciated, many having been found dead. Out of twenty-seven, received in twelve days by Messrs. Williams & Son, six had the tarsus mutilated and one had completely lost a leg.

WILSON'S PETREL. *Oceanites oceanicus* (Kuhl)

Was obtained in two inland localities in Ulster, in October 1891, after a storm.

Thompson mentions that Glennon, the Dublin taxidermist, had in August 1840 presented him with a Wilson's Petrel, which he believed to have been obtained in Ireland, but the locality of which had not been recorded. Thompson did not consider that this specimen was evidence enough for including the species in the Irish list.

In the concluding days of September 1891 occurred those westerly gales, which, as has been stated, drove many Fork-tailed Petrels and some Storm-Petrels over Ireland; and on the 1st of October the first authenticated example of Wilson's Petrel was shot on Lough Erne by Mr. Thomas Plunkett, of Enniskillen, who presented it to the Dublin Museum (Williams, in *Zool.*, 1891, p. 428).

Next day, the 2nd of October, an adult female in fair plumage was found alive, but in an emaciated state, in a field at Mossvale, co. Down. It sat upon the ground, and its legs seemed of little use for walking, though it got along to some extent by the aid of its wings. Next morning it was dead. It was exhibited at a meeting of the Belfast Naturalists' Field Club, on 27th November 1891, by Mr. Robert Patterson, who favoured me with a photograph of it (*Ibid.*).

Family PUFFINIDÆ.

THE GREAT SHEARWATER. *Puffinus gravis* (O'Reilly).

Uncertain visitor, chiefly along the west coast and in autumn.

The Great Shearwater has been met with singly, in small parties, and occasionally in large flocks on the sea off the Irish shores, from Waterford and Cork in the south, round the western side of Ireland up to and including Donegal, and was once observed off Slrangford Lough in June by Mr. Lloyd Patterson.

It has been noticed once or twice in each of the months of April, May, June, and July, but most often in August and September; while a large number once remained through October until the beginning of November (*Proc. Dublin N.H. Soc.*, 1855, pp. 83 and 84).

This bird has been occasionally obtained on fishermen's baited lines, and has twice been washed ashore in a dead or dying condition, but as it habitually keeps out to sea it is very rarely killed, and our knowledge of it is chiefly obtained through observations made from vessels which it has passed.

Waterford. - Davis obtained two living specimens, caught by hake-fishers off Dungarvan, one in August 1835, and the other in September 1839 (Thompson, III., p. 407).

Cork. - Two others were taken alive in the same manner off Youghal, and seen by Kinahan (Proc. Dublin University Zool. Assn., 16th December 1854). Four were seen off

Bantry Bay on 25th August 1890 by Mr. T. H. Poole. A considerable number were passed between Kinsale and Galley Heads on 25th August 1892 by Mr. H. Becher; and the same gentleman saw a Great Shear-water west of Galley Head on 8th September 1899.

Kerry. - "Thousands" were said by Chute to have been seen during mild, foggy weather in Dingle Bay. They appeared about the end of September 1854 and remained until the beginning of November. They were exceedingly bold, seizing refuse thrown to them, and were easily captured with baited hooks. It was not the first time that these birds had similarly visited that coast (Proc. Dublin N.H. Soc., loc. cit.). The two in Dublin Museum were probably obtained at the above time. One was seen south of the Skelligs on 1st

September 1899, and another inside those islands next day by Mr. H. Becher.

Galway. - I observed one off Slyne Head on 11th June 1890.

Mayo. - A Great Shearwater that had been driven ashore by a gale was obtained near Ballycastle by Mr. Warren on 22nd August 1859; and several were seen between Donegal Bay and the north coast of Mayo on 15th September 1894 by the Rev. W. S. Green.

Sligo. - A bird that had been found on the seashore was received by Messrs. Williams & Son on 12th August 1886. Eleven were seen fishing off Enniscrone by Mr. Warren at the unusual date of 23rd April 1893 (Zool., 1894, p. 22).

Donegal. - Three were said to have been seen by Ball off Bundoran on 16th July 1840 (Thompson, III., p. 408); three noticed by Mr. H. C. Hart, at the mouth of Lough Swilly on 19th May 1890 (Zool., 1891, p. 465); several were seen in Donegal Bay on 20th September 1897 by the Rev. W. S. Green, who also saw others on the west coast in the autumn of 1893.

Down. - One was observed by Mr. Lloyd Patterson outside Strangford Lough on 11th June 1887.

The Great Shearwaters' mode of fishing, as described by Mr. Warren, is characteristic. "While in full flight close along the surface, and without the slightest pause, they dashed into the water with a splash, and disappeared beneath it for some moments, reappearing again a few yards further on. This they continued to do while beating to and fro over the spot where the fish were, like sporting dogs quartering a field for game."

In consequence of a suggestion in the "Fowler in Ireland," that the Great Shearwater might be found to breed on the islands of Kerry, I made inquiries for years of light-keepers there, and they repeatedly sought for this bird; but the conclusion arrived at was that it does not land there at all.

Searches for a breeding-place of the Great Shearwater on Irish coasts would seem to be hopeless if, as Mr. Saunders intimates, this bird probably resorts to the Southern Ocean for reproduction, like Wilson's Petrel, which harmonizes with what has been stated of the large numbers annually captured in the Bay of Fundy (Saunders's "Manual," p. 738).

Very interesting observations on the Great Shearwater will be found in "Notes on Rockall Island and Bank," with a Report on the Ornithology by Messrs. Harvie-Brown and Barrington (Trans. RI. Irish Academy, Vol. XXXI., Part III.) .On both occasions when Rockall was visited, in June 1896, considerable numbers of Great Shearwaters were met with in its vicinity, singly and in flocks. The only specimen procured, a female, was not in a breeding condition at the time.

THE SOOTY SHEARWATER. *Puffinus griseus* (J. F. Gmelin).

A rare and accidental visitor, hitherto only twice obtained in Ireland, though seen more frequently.

A specimen of the Sooty Shearwater, which I have recently examined, is in the collection at Chute Hall, near Tralee. It was identified by the late A. G. More (Zool. 1881, p. 334), and is probably the bird described as a Great Shearwater by Andrews, who saw it in a recent state in August 1853 (Proc. Dublin N.H. Soc., 9th

December 1853, p. 76). He stated that it was obtained from Dingle Bay, but More described the locality of its capture as off the Little Skellig.

Mr. H. Becher has communicated to me the following notes, made during a yachting expedition to the south-west coast in 1899; - "September 2nd, Valentia bound for Castletownsend. Just outside the Skelligs a Sooty Shearwater and a Great Shearwater, flying together, passed close to the yacht. September 5th, Castletownsend, bound for Kingstown. About three miles west of Galley Head two Sooty Shearwaters Hew quite close under the stern. A few minutes later a Great Shearwater came close to the yacht.

...The Sooty Shearwaters seemed rather smaller than the Great Shearwater, and were a very dark brown all over, almost black. They came quite close to me, but I was steering at the time."

It is related by Thompson (III., p. 409) that on 24th August 1849 Mr. R. Warren, when hake-fishing about three miles off Cork Harbour, saw two Great Shearwaters, Mr. Warren, however, on seeing the Chute Hall specimen in 1881, identified the birds observed on the above occasion as Sooty Shearwaters, from their dark colour and large size as compared with the Manx Shearwaters near them at the time (*Zool.*, 1881, p. 420). Mr. Lloyd Patterson has a specimen which is now recognized by him as a Sooty Shearwater, though otherwise described in "The Birds, Fishes, &c., of Belfast Louh," p. 87. It was obtained off Bangor, co. Down, on 29th September 1869.

The above instances have all taken place in the months of August and September, the season in which the Great Shearwater also has most frequently occurred on Irish shores. On the Rockall expedition, when about twenty miles north-west of Donegal, on 18th June 1896, a bird was seen which Mr. Barrington believes to have been a Sooty Shearwater.

This species undoubtedly breeds in the Southern Ocean.

THE MANX SHEARWATER. *Puffinus anglorum*
(Temminck).

Resident, but rare in winter, when the great majority migrate. Breeds very locally on each side of Ireland.

The largest breeding-colonies of the Manx Shearwater known on the Irish coast are on the two Skelligs and Puffin Island in Kerry, and some of these birds are said to nest on the Blaskets. The Shearwaters seen fishing so numerous in summer along the coast of western Cork possibly resort to islands there, though the localities are not ascertained. There are no suitable islands off Waterford; but on the Saltees Mr. Barrington has taken eggs, and I have heard the weird calls of a considerable colony at night. There are a few points along Wicklow and Dublin where a very limited number nest, but great colonies exist on Rathlin Island, and on Aranmore in Donegal there are two or more stations of this bird. On the north coast of Mayo it is believed to breed on two islands at the foot of the tremendous cliffs. I was also told that birds answering to the description breed on High Island, west of Connemara; and as I was returning from Inishturk to Inishbofin, at 8:30 P.M. on 14th June, thirty Shearwaters passed in a close flock. Mr. F. J. Ryan, who was stationed on the Aran Islands, stated that these birds bred on the north-west corner of the principal island.

There are probably many unknown breeding-haunts on remote spots, especially in the West, as a bird which never shows itself by daylight on land is difficult to discover; but as evidence of its general distribution in June and July, I may mention that during the cruise of Mr. H. Evans's yacht "Aster" in 1899 Mr. Barrett-Hamilton noticed some on every section of the Irish coast.

There is no information before me of the Manx Shearwater in January, but it has been observed in February, and it appears at its breeding-haunts in March, when its nocturnal cries have been repeatedly heard. In April these birds flock to their homes. They occur in that month and the following in large numbers on the Dublin coast, and again become numerous in autumn. The eggs are laid in May, much earlier than those of the Storm Petrel, and young are hatched by the middle of June. These become huge balls of down before they assume their feathers late in July or in August. When the young have taken wing, Shearwaters are seen off the coasts in the largest numbers, but after October few are to be met with, and they diminish very greatly towards the end of the year, when stragglers only occur.

I have repeatedly seen flocks of Shearwaters resting on the sea. They would rise and wheel or fly along slowly, occasionally alighting as if to pick up food. Their flight when in company is quite unlike the rising and falling motion adopted when separately roaming for prey.

The habit, which gives the bird its name, of dipping towards the sea in flight, and scudding the surface ere it mounts again, has doubtless for its aim to pick up objects from the surface. But the Shearwater will dash into and under water without closing its wings, and it seems to fly or row itself with them beneath the surface for a few yards, though it soon emerges. It will also dash under water in the same way, with its wings spread, when it has been swimming or resting; but it does not dive with a sort of summersault as the Auks do.

I have plainly seen these birds pursuing fish in the manner described, and Mr. Warren has found them to swallow much more substantial food than the oily matter they sometimes disgorge; for he has known one on being seized to eject sprats and the entrails of fish that had been thrown overboard.

The crowing or hooting of Shearwaters can be heard on the Saltees at the end of May. I walked along the cliffs there one dark night; when from above, around me, and beneath (apparently at times from burrows in the ground) came their loud cries. These consisted of four articulations like "kuk, kuk, ah, oo," kuk, kuk, ah, oo," repeated by numbers of birds in the most tragic tones; but while some uttered them in a deep voice, others adopted a higher and more plaintive key, as if in mimicry of their neighbours. I could just distinguish the dark forms of the birds that were making these sounds when they flew over me.

The following year, when I visited the Saltees with Mr. Seeböhm, our hope of hearing the Shearwaters was disappointed, as there was moonlight. We scarcely heard one of them, though we remained out until 2 A.M., when a Night jar struck up, and ere it was done the chorus of Skylarks began.

The notes I have described have been heard as early as the 21st of February and as late as October (Migration Reports), but I am not aware that they are uttered far out at sea. They seem to proceed from the members of a breeding-colony which do not issue from their burrows until about 10 P.M., when it is dark, and they then flutter along the ground for some distance before they succeed in taking wing (Barrington). Numbers of Shearwaters, presumably the males, may, however, be seen flying all day over the neighbouring sea.

Before the egg is laid a pair of Shearwaters may be found in the same burrow. The Kerry peasants search their breeding-places for the birds, which they kill and eat. These have no escape, but they try to bite and scratch. The peaty sod is easily tom up by men's hands, but the burrows sometimes extend several feet or even yards. They are at all heights on the slopes of the islands. On Rathlin and Aranmore turfy slopes of broken ground are inhabited which are found between the top and bottom of the cliff-face. On the Great Skellig the Shearwaters chiefly nest under large flags, as the Petrels do under smaller stones. There is sometimes a little bed of hay or roots under the egg, but it is often laid on the bare peat.

The extraordinary vitality of this species was exemplified by a young bird which showed signs of life when it was taken out of an egg, though the latter had been removed from the nest seven days before and sent across Ireland.



Mr. Barrett-Hamilton's photograph here reproduced shows a portion of the Little Skellig with Gannets sitting on the higher ledges. Many Shearwaters and Storm Petrels breed on this island, which is probably the most picturesque bird-rock round the Irish coast. It has a central peak 440 feet in height, from which several elevated spurs radiate, and one of these is pierced by a lofty arch like a flying buttress. The upper ledges and platforms of this island support an enormous and varied colony of sea-birds.

THE LITTLE DUSKY SHEARWATER. *Puffinus assimilis*,
Gould.

Has once been obtained, off the Bull Rock, co. Cork.

A bird of this species settled on the little sloop "Olive", when it was passing the group of islands known as the Bull, Oow and Calf Rocks, off the western termination of co. Cork. The Shearwater was taken alive and brought into Valentia Harbour on 6th May 1853) when it was presented to the late Mr. Bewicke Blackburn,

who gave me the above particulars from notes taken at the time. The specimen was preserved for many years in Lancashire, but in 1894 Mr. Blackburn and his son generously complied with my suggestion to present it to the Dublin Museum, where it is now preserved. This bird was described by Yarrell as the Dusky Shearwater, *P. obscurus* ("Brit. Birds," 3rd Ed., III, p.659); but on examination it was found to be the *P. assimilis* of Gould by Mr. Howard Saunders, who exhibited it at a meeting of the British Ornithologists' Club on 10th March 1898, and has described it in the last edition of his "Manual of British Birds."

THE FULMAR. *Fulmarus glacialis* (Linnæus).

Rare and accidental visitor; has been repeatedly driven ashore by storms.

It is probable that the Fulmar seldom or never comes to the shores of Ireland except by accident, and out of the fourteen specimens that Mr. Warren has obtained during forty years on Killala Bay only two were alive; and even they were in the last stage of exhaustion and were found falling a prey to the Great Black-backed Gulls. The majority were water-logged specimens, whose feathers were full of sand, so that it was impossible to say whether they had perished at sea or on the shore. Such cases might probably be found to occur not infrequently on the north and west coasts if they were watched for. This bird has, however, been shot in several instances, as those in co. Cork and Dublin Bay, recorded by Thompson, and in other cases it has been taken alive, probably in an exhausted condition, as at Rathlin and Londonderry.

The counties on whose coasts the Fulmar has been obtained, or observed, and the number of instances recorded in each are as follows; - Kerry (1), Cork (2), Dublin (1), Mayo (2), Sligo (12), Antrim (3), Londonderry (1), Donegal (2).

Nineteen cases have occurred in the following months;

January.....2	April.....-	July.....-	October.....9
February.....-	May.....2	August.....-	November...2
March.....1	June.....1	September.2	December....-

It thus appears to be chiefly an autumn-visitor but the occurrences in January, March, May, and June do not answer to this description. The two May instances took place in Donegal Bay, where Mr. Ernest Holt observed several Fulmars about five miles from land between 15th and 18th May 1891. Mr. H. L. Jameson picked up a bird of the grey-breasted form on the sands near Bundoran on 19th May 1892 (*Zool.*, 1893, p. 75). The Rev. W. S. Green observed a Fulmar late in June 1890, midway between Broadhaven and Douegal Bay.

Most of the birds obtained in Ireland seem to have been adults, but the first that Mr. Warren found, and which is now in Queen's College, Cork, is described by him as having been in dark, mottled plumage; and the same description applied to one that he found dead in 1892.

Though apparently avoiding the vicinity of land, Fulmars have been often seen by the Rev. W. S. Green and Mr. Holt, who accompanied him, when they went from ten to twenty miles west of the Irish coast. These observations were made off the Skelligs in May 1889, west of the Mayo coast in July 1890 and in the summer of 1891, and off Donegal Bay on several occasions. Quite a flock was sometimes met with, and of those seen in the end of June or early in July 1890, Mr. Green wrote; - "Numbers of Fulmars came close to us; we could pelt them with stones. Most of them had the speckled appearance of young birds, and a jagged gap in the wing which looked as if they were moulting."

The only instance in which I have seen one was when we were some sixty miles west of the Skelligs on 4th July 1889, when a grey-backed bird, which I believe was a Fulmar, passed with skimming flight like that of a Shearwater.

It seems probable that the birds seen so often in summer on the seas west of Ireland are Fulmars of the previous year which are not breeding, and this bird may always be expected in summer from twenty to thirty miles north or west of our shores (Harvie-Brown and Barrington in Rockall Report, *supra*, p. 71).

APPENDIX

Species whose claims to be included in the list of Irish Birds are at present considered to be insufficient.

It seems necessary to give some account of the following fifteen species which have been recorded from Ireland, but whose claims to attention are so different that they cannot be placed in the same category.

Two, the Reed-Warbler and Ortolan, are European, and only await the evidence of fresh occurrences to be admitted.

There are eight American species—the Migratory Thrush or "Robin," Purple Martin, Belted Kingfisher, Yellow-billed Cuckoo, Black-billed Cuckoo, American Goshawk, Passenger-Pigeon, and Canada Goose. Some of these were long admitted to the British list on the strength of specimens obtained in Ireland. They are, however, rejected by Mr. Sannders in consequence of the probability that the land-birds perched on vessels coming from America, or were brought over in confinement. The Canada Goose, and probably some of the African species (the Gallinule and Egyptian Goose), are regarded as escapes from confinement, The Black-winged Kite, the third African species, was killed nearly sixty years ago, and there is some obscurity about its antecedents before it came into its present owner's possession.

There are two species from the Southern Hemisphere, the Goliwented Thrush and the Yellow-billed Sheathbill, concerning which many naturalists hold that it would have been impossible for them to have crossed the tropics and come to Ireland of their own accord.

THE AMERICAN "ROBIN," *Turdus migratorius*, Linnæus.

Has twice been obtained in Ireland.

The first, an adult male, in almost perfect breeding-plumage, was shot at Springmount, Shanakill, a few miles from Dublin, on the 4th May 1891, and is in the Science and Art Museum, Dublin. It was in good condition and the stomach contained remains of beetles. It did not show any sign of having been in a cage (*Zool.*, 1891, p. 219).

A second was shot on the shore of Lough Gill, co. Sligo, on or about the 7th December 1892, by Mr. West, gamekeeper, who preserved it. I found it in his possession in 1896, its species being unknown to him. Mr. West states that, when he shot it, it was feeding with a similar bird, and with Snipe, Lapwings, Field-fares and Redwings, near the shore of the lake, during heavy snow, which had begun to thaw on the 5th December. This specimen is also in the Dublin Museum.

It is difficult to see how these and other American "Robins" taken in Europe could have crossed the Atlantic without aid from vessels.

THE REED-WARBLER. *Acrocephalus streperus* (Vieillot).

Is said to have been once obtained, in winter.

A male Reed-Warbler was announced by R. J. Montgomery as having been shot by him at Raheny, near Dublin Bay, on 21st December 1843 (*Zool.*, 1848, p. 2143). He further stated that about the same time, snow being then on the ground, he shot a Whitethroat and two Blackcaps (*Proc. Dublin N.H. Soc.*, 1852, p.89).

The unusual season at which the birds occurred would be less a difficulty when it is remembered how many summer-visitors have occurred in Ireland in winter; but though Thompson and Kinahan both referred to the above Warbler, neither of them appears to have seen it, and there is no Reed-Warbler among Montgomery's birds in the Dublin Museum.

It is safer, therefore, to await the occurrence of a specimen that can be satisfactorily determined before including this species.

THE GOLD-VENTED THRUSH.

Pycnonotus capensis

(Linnæus).

A specimen referred to this species by Professor Newton, after he had seen the original sketch of it, was presented in 1846 to Trinity College Museum by the late Dr. Burkitt of Waterford. I have before me his correspondence with Yarrell and Professor Newton about this bird, and his private notes on the subject, intended for no eye but his own. It is indisputable that he believed it to have been shot at Mount Beresford on the 10th January 1838 and to have been skinned and preserved by him; He had, however, a friend, Captain John Hudson, at the Cape, from whom he received natural history specimens from time to time. Could the skin of a Bulbul have been received from this gentleman, put by unlabelled, and afterwards mistaken by Dr. Burkitt for the skin of a bird he had preserved in 1838? He is unfortunately not now, alive to throw light on this, and the specimen has ceased to exist. I saw it in 1854, but before 1860 it had disappeared, possibly in the removal of the collections of Trinity College Museum to another building. The original coloured sketch of it, however, is in the Science and Art Museum, Dublin.

The South African Spotted Eagle-Owl preserved by Dr. Burkitt was supposed by him to have escaped from some vessel near Waterford Harbour, as stated in his later communications.

THE PURPLE MARTIN.

Progne subis (Linnæus).

Is said to have been once obtained; the only identified specimen recorded in Europe.

Yarrell published in March 1840 (Part XVII., 1st Edition) a letter from a Mr. Frederick McCoy, of Dublin, informing him that a female of this species had been shot near Kingstown and sent to Dr. Scouler for dissection a few hours afterwards. This specimen is still preserved in the Irish collection of the Dublin Museum.

THE ORTOLAN BUNTING. *Emberiza hortulana*, Linnæus.

A specimen of the Ortolan now in the Science and Art Museum, Dublin, was exhibited by Montgomery before the Dublin Natural History Society in May 1852 (Proceedings, p. 91). He is stated to have then said: "The specimens of the Ortolan Bunting and Tree-Sparrow, now before you, I received as Irish examples, and I believe them to be 80, but not having killed them myself, I cannot positively announce them as such. ..Neither of them have been before taken in Ireland." He does not appear to have stated where the Ortolan was taken, though "co. Clare" has been given as the locality.

Montgomery on the above occasion exhibited a Scops Owl, which he believed to have been killed in Clare, but which was afterwards labelled "Wexford." It would seem therefore as if the bird-stuffer with whom Montgomery had dealings was rather vague as to the data, and the Ortolan had better be omitted.

THE BELTED KINGFISHER. *Ceryle alcyon* (Linnæus).

Occurred in two instances in the province of Leinster the same autumn.

The first of these, a female, now in Trinity College Museum, was shot at Annsbrook, co. Meath, on the 26th October 1845. Dr. Ball considered that its unimpaired plumage denoted a wild bird.

The second was shot on a stream in the Wicklow Mountains in the following month of November, and having come into the collection of the late T. W. Warren, was left by him to the Science and Art Museum, Dublin.

High authorities differ as to whether this species should be admitted into our fauna on the strength of the above occurrences. On the one hand the bird is known to fly as far as the Bermudas and the West Indies on its

autumn migration, during which these examples were shot. It also has been found fishing at sea. On the other hand, it has been suggested that these two specimens, which occurred in the same quarter of Ireland, may have escaped from the same cage.

THE AMERICAN YELLOW-BILLED CUCKOO. *Coccyzus*
americanus (Linnæus).

Has been twice obtained, in autumn.

Trinity College Museum still contains a specimen of this bird, which was brought to Ball, freshly killed and bleeding, at Youghal in the autumn of 1825.

When announcing this bird in the *Field Naturalists' Magazine*, October 1832, he was able to mention a second specimen, then recently killed near Brd.y. The latter was examined by Thompson, and is preserved in Queen's College Museum, Cork. Four or five other specimens have occurred in the autumn from time to time on the west coasts of Great Britain, though it is impossible to deny that some or all of them may have been assisted in transit from America by resting on vessels.

THE AMERICAN BLACK-BILLED CUCKOO. *Coccyzus*
erithrophthalmus (Wilson).

Has occurred once, in September.

An example of this New-World species was shot in the parish of Killead, co. Antrim, on 25th September 1871, and passed into the possession of Mr. H. Blake Knox. Lord Clermont gave the result of a careful comparison of it with American skins, by which its species was determined (*Zool.*, 1872, p. 3022, and *Zool. Soc. Proc.*, 1872, p. 661).

Another was killed near Lucca in 1858, these being the only two instances known of its occurrence in Europe.

THE AMERICAN GOSHAWK. *Astur atricapillus* (Wilson).

Two instances are recorded.

One, an adult female, was shot on the Galtee Mountains, county of Tipperary, in February 1870. It was presented by Mr. G. K. S. Massey Dawson, of Ballyuacourty, to the Science and Art Museum, Dublin, where it is still preserved (*Ibis*, 1870, p. 538).

A second, also a female, was shot shortly afterwards near Parsonstown, King's County, as stated by Mr. A. B. Brooke (*Zoologist*, s. s., p. 2524 [1871]).

THE BLACK-WINGED KITE. *Elanus caeruleus*
(Desfontaines).

An immature specimen of this semi-tropical bird is in the possession of Sir John Dillon at Lismullen, Navan. It appears to have been sent to him about 1870 by Dr. Nicolls, who received it in the flesh about 1842 and preserved the skin.

This bird was stated by Dr. Nicolls to have been shot by a Mr. Horan on the bog of Harristown, co. Meath, probably late in the autumn or in the winter, as a Bittern was shot on the same day.

The original account (*Ibis*, 1872, p. 471) contains some inaccuracies (*Zool.*, 1875, p. 4455).

THE EGYPTIAN GOOSE.

Chenalopex aegyptiacus (Linnæus)

Of the Egyptian goose there are twelve records. Mr. H. Blake Knox stated that he saw a large flock on the North Strand, Dublin Bay, in January 1863 (*Zool.*, s. s., p. 304 [1866]). Small parties were seen, and specimens were obtained, on the Boyne and Belfast Loughs; and a pair were shot at O'Brien's Bridge on the Shannon, between Limerick and Clare.

The occurrences were distributed as follows: - Cork (1), Limerick (1), Queen's Co. (1), Dublin (2), Louth (2), Monaghan (1), Down (4). Three of the localities, it may be observed, were inland.

The above cases took place in the months of January (2), March (1), April (1), June (1), July (1), August (1), October (1), November (1), December (2). Such records as these do not seem reconcilable with any seasonal migration, and rather suggest the accidental occurrences of escaped birds; and in this connection I may mention a remark of Mr. E. Williams; that Sir A. Bellingham bred Egyptian Geese in co. Louth, of which a good many flew away.

THE CANADA GOOSE. *Bernicla Canadensis* (Linnæus)

There are ten records of the Canada Goose, and from one of these we learn that a flock of six were observed in two successive winters near Innishannon, co. Cork, when two of them were shot (Thompson, III., p. 25). In another instance four appeared on the pond of the Zoological Gardens, Phoenix Park, Dublin (Ibid). Nine were seen and one shot in co. Wicklow in the beginning of March 1895 (Messrs. Williams & Son). A pair were shot at Dundrum on the coast of Down on 6th June 1844, and in other cases single birds were obtained.

The species has been thus taken in the following counties, and the numbers indicate the separate occurrences: - Cork (2), Wicklow (2), Dublin (3), Armagh (Lough Neagh, 1), Down (1), Antrim (1).

All these cases took place on the side of Ireland nearest to Great Britain, and not on that nearest to Canada.

The months are given us in nine cases as follows: - January (2), February (1), March (2), April (3), June (1).

The absence of any records for the last six months of the year is a significant fact; and from a review of the foregoing facts there appears to be no reason to think that any of these Canada Geese visited Ireland directly from America.

THE PASSENGER-PIGEON. *Ectopistes migratorius* (Linnæus).

Has been once obtained, in co. Kerry.

Of this occurrence Thompson wrote (III., p. 443):- "Mr. R. D. FitzGerald, Jun., writing from Tralee in July 1850 (said), I had in my possession, about two years ago, a Passenger-Pigeon, which was caught near this town, when unable to fly from fatigue. From this circumstance, there can, I think, be no doubt that it came direct from America, as a bird of its powers of flight would not have been exhausted unless it came from some very great distance. It never became tame, though I had it in confinement for about two years, at first alone, and afterwards in company with other pigeons. It would walk backwards and forwards in a very shy manner when anyone looked at it, and always avoided the other birds."

THE GREEN-BACKED GALLINULE. *Porphyrio smaragdtonotus*, Temminck.

Has been twice obtained, on or near the north coast of co. Kerry,

I have examined the specimen at Chute Hall, believed by Thompson to be a Martinco Gallinule, and after looking over the skins of the several Gallinules in the British Museum, I find that Mr. Chute's bird is of the Green-backed species. It was said to have been blown upon the coast near Brandon (Thompson, II., p. 331), and was picked up dead in a ditch about the first week in November 1845 (Harting, in Field, 14th December 1878).

A second Green-backed Gallinule was obtained in a cabbage-garden near Ballyheige Bay, on the same line of coast in co. Kerry on 10th October 1873. It is in the possession of Lord Ventry, who submitted it for inspection to A. G. More. The species being an inhabitant of Egypt, and often sent in a living state to England to be kept in confinement, is not admitted to British avi-fauna; but it is interesting that the only two instances of its capture in Ireland should have occurred in the extreme South-West, where many other rare birds have wandered, as the Migration Reports from the Blaskets and Skelligs show. The district is at a great distance from places where foreign birds are likely to be kept.

It is also worthy of remark that both the above birds occurred in autumn, when the migratory instinct must be strongest in the Rails, as the reports of their occurrences at lighthouses show.

A Purple Gallinule (*P. caeruleus*) said to have been killed in Ireland is mentioned by Mr. Harting (*Field*, 14th December 1878).

THE YELLOW-BILLED SHEATHBILL.

Chionis alba,

Latham.

A female of this Antarctic species was observed on a rock near the Carlingford lighthouse, co. Down, on 2nd December 1892. It seemed to take no notice of the approach of the lightkeeper, Mr. R. Hamilton, who fired at about thirty yards. Then, on taking wing, it performed a circuit and returned to the rock, where it was shot, but was still able to take wing and alighted on the sea, when it was captured. It was said to move on land with a "proud, bold walk," and its flight was compared to that of a Puffin, but was less rapid.

It proved to be fat, and was in such unimpaired plumage that Mr. E. Williams, who preserved it, considered that it showed no traces whatever of recent confinement. It appeared to be in a state of moult, as some of the old feathers were not yet cast, but these showed no sign of captivity; and the ovary contained some small eggs like pin-heads (*Zool.*, 1893, p. 28, and *Irish Nat.*, 1893, p. 151, with a photograph).

This specimen was exhibited before the Zoological Society on 28th February 1893, and is in the collection of Mr. R. M. Barrington, who received it in the flesh.

In the "Dictionary of Birds," p. 823, Professor Newton alludes to the capture, and remarks that the bird thus killed may well have escaped from confinement, while Mr. Howard Saunders in his Manual makes a similar suggestion.

If that were so, this Sheathbill must have maintained itself at liberty for some time under conditions favourable to its health; however, as Mr. Barrington remarks, the Sheathbill has been met with at great distances from land in the Southern Ocean, and he suggests that there is nothing impossible in its travelling north of the Equator if it could find suitable food on the journey. It certainly seems to be able to rest on the water and swim to some extent.

The following species were excluded by name in the last edition of the "List of Irish Birds" by A. G. More, published in 1890, and have not been admitted in this volume:-

Blue Thrush.

Nightingale.

Reed-Warbler.

Bearded Titmouse.

Crested Titmouse.

Nuthatch.

Blue-headed Wagtail.

Tree-Pipit.

Pine-Grosbeak.

Cirl Bunting.

Tawny Owl.

Martinico Gallinule.

Ruppell's Tern.

Brunnich's Guillemot.

Cape Pigeon.

Eagle-Owl.

Spotted Eagle Owl.

Red-breasted Goose.

Membranaceous Duck.

American Wigeon.

Buffel-headed Duck.

Green-backed Gallinule.

ADDENDA

SONG-THRUSH; p. 2. - After mentioning the immigration of flocks in October and November I remarked (p. 3, supra) that the return journey is observed chiefly in February. Mr. R. M. Barrington has gone very carefully into the migration of the Song-Thrush, and gives me his opinion that, as a rule, no departing birds are observed at light-stations, and that even those which are noticed in February are then arriving. I will not attempt further to forestall the elaborate paper he has prepared on this subject to accompany the Migration Reports of 1888-1897.

BLACK REDSTART, p. 11. - The following birds occurred last autumn, 1899:- 1 saw one at my window at Cappagh on 2nd November, and five specimens were obtained in different parts of Ireland-two at Wicklow Head, on 28th October and on the 1st November (Mr. Barrington) ; one at Killiney, co. Dublin, on 15th, and another at Portmarnock in the same county on 20th November; while another was obtained at Portaferry, co. Down, before the 15th of the same month (Mr. C. Langham).

WHITETHROAT, p. 13. - Mr. Barrington informs me that the instance to which I referred as having occurred in February took place probably the previous autumn, and that the specimen reached him in February.

LESSER WHITETHROAT, p.14. - A second Irish-taken specimen has been received by Mr. Barrington. It was caught at the lantern of Inishtrahull lighthouse, 10th October 1899.

WHITE WAGTAIL, p. 36. - Mr. W. T. Crawstay, writing in the *Zoologist*, 1899, p. 418, states that on 20th April 1899 he observed a bird of this species on the River Lee in co. Cork. A fine specimen received by Mr. Barrington, was caught at the lantern of Inishtrahull lighthouse on 23rd April 1900. Both the localities are new; but the latter is specially interesting, as the White Wagtail could only have occurred there on migration. Inishtrahull seems to be often touched by birds on their passage to the North from Ireland.

YELLOW WAGTAIL, p. .39. - A Wagtail received by Mr. Barrington from the Tuskar and killed there on 22nd September 1887 proves to be a Pied Wagtail. He has therefore received but two Yellow Wagtails from the Tuskar, not three as I had stated.

PIED FLYCATCHER, p. 47. - Another immature bird has been received by Mr. Barrington which was caught on the Fastnet on 9th October 1899. This is the eighth Irish-taken specimen, and all, except the first, have been obtained at lighthouses on the autumn migration.

HAWFINCH, p. 53. - Mr. Trumbull announced in the *Irish Naturalist*, 1899, p. 27, that an adult male had been obtained at Portmarnock on the Dublin coast on 13th February 1898.

GOLDFINCH, p. 54. - Having stated that no specimens had been received from the Wexford lightships, I wish to record that Mr. Barrington has since informed me that he has received two Goldfinches, one taken at Lucifer Shoals on 21st October 1898, and the other at Blackwater Bank on 18th October 1899.

ROSE-COLOURED STARLING, p. 81. - A fine adult male was obtained at Killybegs, co. Donegal, on 21st July 1899, by Mr. Arthur Brooke. It had frequented his fruit garden in company with Blackbirds for several days previously. This makes the third occurrence recorded from western Donegal. Another specimen, in moult, was shot at Belgarriff House, Foxford, co. Mayo, on 5th November 1899, by Mr. James A. Knox (Warren, in *Zool.*, 1900, p. 37, where "1898" should read 1899). The Rose-coloured Starling has never been recorded from Mayo before, nor at so late a season.

The above occurrences, together with that which took place near Londonderry in June, make three for 1899, after an interval of twenty years, during which the species was not recorded from Ireland.

HOOPOE, p. 111. - In April 1900 Hoopoes were obtained in the counties of Cork, Waterford, Wexford, Carlow, and Antrim; and another was seen as early as the 12th of March and again on the 24th of that month, at Enniskean, co. Cork, by Mr. J. E. Longfield, who mercifully spared the bird.

SHORT-EARED OWL, p. 116. - A specimen received by Mr. Barrington was shot on Aranmore Island on 21st October 1899; another example from the north-west coast.

MONTAGU'S HARRIER, p. 122. - An immature male was shot near Kylebeg, Blessington, co. Wicklow, on 7th September 1899, which probably belonged to the same brood as the two young birds obtained in northern Wexford the previous August (Williams, in *Irish Nat.*, 1900, p. 21).

ROUGH-LEGGED BUZZARD, p. 124. - A fine male was obtained at Campsie, co. Londonderry, on 4th October 1899, by Mr. W. Kirk-patrick (Campbell, in *Irish Nat.*, 1900, p. 50). This is the third occurrence of the species in that county.

HERON, p. 158. - My daughter informs me that there is a considerable heronry on an island in Lough Cloonaglin, co. Kerry, which should therefore be added to the list.

NIGHT-HERON, p. 164. - An adult female was obtained at Corstown, co. Meath, as I am informed by Mr. E. Williams, who received it for preservation on 10th May 1900.

COMMON BITTERN, p. 167.- Towards the end of December 1899, and early in January 1900, Bitterns were shot twice in Clare and once in each of the counties of Limerick, Queen's Co., Westmeath, and Mayo; while another was identified in co. Cork on 13th January by three gentlemen who were shooting, but who laudably spared it. Were the latter course generally followed the Bittern might again be numbered among the birds that breed in Ireland.

WHOOOPER SWAN, p.184. - Messrs. Williams & Son received a Whooper which was shot at Belmullet, co. Mayo, on 15th November 1899.

BEWICK'S SWAN, p. 185. - A herd of twenty of these Swans, all adults, visited the sands between Bartragh Island and Moyne Abbey, in Mayo, on 12th December 1899. One bird which was obtained measured 3 feet 9 inches in total length and weighed 141bs. (Warren, in *Irish Nat.*, 1900, p. 21).

GARGANEY, p. 198. - A female shot near the Curragh, co. Kildare, on 20th September 1899, was sent to Messrs. Williams & Son for preservation. This is the second Garganey obtained in Ireland in autumn.

LONG-TAILED DUCK, p. 210. - Mr. Sheals, of Belfast, received for preservation a male in spring plumage obtained at Kilkeel, co. Down, on 16th February 1899. Another adult male was shot at Dundalk lighthouse on 8th November 1899, and sent to Mr. Barrington in the spring of 1900. Messrs. Williams & Son received three specimens from Mr. Jones, who shot them upon the upper section of Lough Corrib and who stated that a flock of about twenty had been on that lake most of the winter, near Inishanbo, the island where he resided. This was a departure from the usual marine habits of the species.

EIDER-DUCK, p. 211. - A female was shot at Carndonagh in northern Donegal at the end of October 1899 (Campbell, in *Irish Nat.*, 1899, p. 27).

SPOTTED CRAKE, p. 238. - One of two birds received by Mr. Sheals, of Belfast, for preservation was shot at Cullybackey, co. Antrim, on 8th October 1898, and the other at Seaford, co. Down, on 7th November 1898.

Early in May 1900 the call of a Spotted Crake was heard for several nights from a marsh near Cappagh, co. Waterford, and on the 10th of that month I listened to it for a long time and as close as thirty or forty yards. It was loud and clear, and sounded like "whuit, whuit, whuit" constantly repeated (*Irish Nat.*, 1900, p. 160).

KENTISH PLOVER, p. 252. - Thompson mentions in a note which I have overlooked (III., p. 445) that the specimen which was preserved in Trinity College Museum and to which I have alluded was shot at Baldoy, co. Dublin, on 8th August 1848.

WOODCOCK, p. 268. - I have just received, 1st July 1900, from Miss Fairholme, Comragh, co. Waterford, the following very interesting description of a Woodcock which lifted two of her young at once: - "My sister and I were standing in a field here one day in May last, and our two dogs were hunting in a small oak-wood at

the other side of the fence near, when we heard a noise, close behind us, something like the cry of a Kestrel, but not quite so loud. On turning round we saw a Woodcock crouching on the ground, fluttering her wings and crying. On our going a step or two towards her to see if she were hurt, she gathered up two little ones; one clasped to her breast by her head and beak and the other between her feet. She flew on slowly a few yards to the top of a very low bank where she let down the young ones, and crouched over them fluttering her wings and crying as before. We waited to see what would happen, when the dogs came out of the fence from the wood. The bird immediately raised up the two young ones as before and flew back into the oak-wood. Both flights were short, and she flew heavily and near the ground, so that we saw the whole proceeding perfectly. We caught the dogs and took them away at once."

Miss Fairholme had remarked previously to me that the bird's bill was invisible during her flight, but that when she let down the nestling which was supported by it she put out her bill.

I have never before heard of more than one young Woodcock being carried off by the parent. The mode of carrying between the legs has been often observed, but the second little one was held in the less usual way described to me by a woodman at Brittas, in Queen's Co. (*Zool.* 1882, p. 306).

SANDWICH TERN, p. 314. - In June 1900 Mr. Langham, of Tempo Manor, informed me that he had received young Sandwich Terns from a place in co. Fermanagh. On my communicating this to Mr. Robert Warren he has visited Tempo, and Mr. Langham has shown him the young Terns, which are kept in confinement, and a few eggs of this species which were obtained at the same breeding-haunt, in 1897.

Mr. Warren visited the place on the 12th July and found about fifteen or twenty pairs of Sandwich Terns there. He also saw some addled eggs and young, though most of the latter had apparently left.