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BIRDS IN HASLEMERE
EDUCATIONAL MUSEUM

NOTES ON THE BIRD COLLECTIONS
AND SPECIAL EXHIBITS

BY

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GENERAL NOTE.

The collections of birds are divided between the Zoological and Geological Galleries and the Hall. Though not to be compared for completeness with some belonging to the larger museums, they have much to show that is interesting and unusual.

To begin with the Hall, a case on the side opposite the door contains an historic specimen—the last great **Bustard of the British race**, shot near Castle Rising in Norfolk, 25th January, 1838. Like all the late survivors it had never been let alone, and the legs show the mark of terrible shot-wounds received long before it met its fate, and already by that time healed up again. Stragglers from abroad still occur, and attempts have been made to re-introduce the species, but the bird is so large, and requires such a spacious open haunt, that they have always failed, and probably always will. With the killing of this bird the history of the Great Bustard as a native species came to an end. A **Pratincole** (*Glareola pratincola pratincola* L.) shot at Wisley on the Portsmouth Road in 1858 is one of the two dozen or so authentic English specimens known. The **Black-cock** shot on Hindhead in 1890 has also some historic value; in the south of England this species, once well known, is now utterly extinct. In the large case underneath is a representative collection of the birds of **Haslemere and District**, arranged ecologically (that is, according to habitat) beginning with the woodland birds above on the left and ending with aquatic forms at the bottom right-hand corner. Red, yellow and green spots distinguish the summer migrants, winter migrants and birds of passage respectively, residents being left plain. A neighbouring case exhibits in the same way some of the many **occasional visitors**, and there is a cabinet of skins obtained locally by Dr. R. J. Hutchinson. Certain of the special exhibits referred to later will also be found in the hall. In the corridor among the local collections are cases of eggs from this neighbourhood.

The main **British collection** begins with the passerines in the central bay on the west side of the Zoological Gallery and is continued past the door leading into the Geological Gallery, in the first bay of which it finishes. Birds of prey,

game-birds, auks and limicolines are most strongly represented ; in passerines, except the crows, thrushes, shrikes and buntings, the Museum is weak. Coloured labels designate the species whose economic status is now pretty definitely known. They err, if anything, on the side of caution, understating rather than exaggerating benefits performed. Most of those not expressly recommended for protection deserve a certain amount of it ; many do some harm, and their cases remain to be satisfactorily settled, but there are probably only three or four that do more harm than good. Game birds have in no case been marked. Attention should be drawn to the pleasing and reliable **Plates from Thorburn's British Birds**, exhibited on stands in the Zoological Gallery, which figure practically every species authentically recorded in the British Isles. These should be used to supplement the collections where an identification is in doubt.

Some **duplicates of the British collection**, which deserved better than to be stowed away, will be found in the farthest eastern bay of the Geological Gallery, the middle bays of which are taken up by **exotic forms**. Among these the **New Zealand birds**, including various extinct or almost extinct species, are particularly interesting. Of the rest the **White Stork, Eagle Owl and Flamingo** are occasionally recorded in Britain, but some, especially of the last species, are undoubtedly escaped birds. That the White Stork at least reaches this country wild has been placed beyond doubt by the finding in Sussex during 1922 of one ringed in a Danish nest. All three are excepted as genuine wanderers by the British Ornithologists Union.

The following special exhibits are also shown :

Bird-marking Exhibit, illustrating the methods, progress and results of tracking migration by ringing birds.

Bird Migration Exhibit.

Bird Protection Exhibit.

Birds more or less confined to the British Isles.

Albinism and Variations in Birds.

Cuckoo Exhibit to explain briefly and illustrate what is at present known about the cuckoo.

These will be found in the two bays at the north end of the Zoological Gallery, or in the main hall. They are described at length on separate labels.

Birds of Haslemere and District.

The birds in this case are all found in the Haslemere District during the whole or a fair part of the year. (They are, however, merely representative species and do not by any means complete the list of local birds, which comprises over two hundred forms, and is published at this Museum as Science Paper No. 7). Those marked with a red spot are summer visitors only, and are mostly absent between September and April, when the winter visitors (marked with a yellow spot) take their place. In addition to these there are several which only occur on passage between their summer and winter quarters, rarely in large numbers, and are indicated by a green spot. These, like our local winter visitors, may breed in other parts of Britain, and some, like the corncrake and sandpiper, have been known to breed on occasion. The remainder, which do not bear any coloured spot, are residents found in the district at all seasons.

Ecology, the science that deals with the relationship of plants to their environment and to one another, may also be applied to bird life. There are bird associations just as there are plant associations; stonechats, yellow-hammers and meadow-pipits form as constant a society on our sandy heaths as oak, bracken and bluebells in the wealden woods. But because birds are exceedingly mobile and adaptable, their groups are much more loosely defined, and most species are interchangeable between two or more of them. No bird, however, flourishes on every sort of ground, and most are very restricted. Even the house-sparrow rarely lives far from houses or a farm; bullfinches are hardly found outside thickets or woods, while skylarks on the other hand consistently avoid such places.

The arrangement of this case is intended to show as far as possible the usual habitat of each species. Beginning at the top left-hand corner with the birds of deep woodlands there is a transition towards the right into those which haunt parks and gardens. All the birds on the right-hand half of the top shelf actually inhabit the town of Haslemere, together with others, such as the jay, which properly belong to the woods but come in freely, even to the grounds of this museum. The bottom shelf, beginning

on the extreme left with farm-haunting birds passes to those of the wide heaths and commons, then to the marsh-dwellers and towards the extreme right to species rarely met with away from the banks of streams and such local waters as Frensham Pond.

Bird Protection Exhibit.

So far as this country is concerned the protection of birds is still at a very primitive stage. A considerable amount of propaganda, well-meaning but often ill-judged ; a code of ramshackle and almost unworkable laws, to which all the birds most worth protecting have to be added by the County Council concerned ; a confusing array of societies, whose activities are not sufficiently co-ordinated, present altogether an uninspiring spectacle. Yet in spite of this glaring lack of organisation and the failure to replace the impossible law of 1880, much is being achieved. Sanctuaries, principally on the coast, protect at least a certain number of the rarest species so far as they can be protected. Most of these are maintained by the Royal Society for the Protection of Birds, a few by the Crown, the Society for the Promotion of Nature Reserves, the National Trust and various other societies, municipalities and private persons. In the neighbourhood of Haslemere there are bird sanctuaries at Gorsedene near Farnham and at Oakhanger near Selborne (in memory of Gilbert White) ; more distant sanctuaries are at Dungeness, Selsdon near Croydon, Richmond Park and Osborne in the Isle of Wight. These, however, can never remove the obligation to look after the interests of birds that rests upon all bird-lovers. Some birds always, and others at certain seasons, are harmful, but there are few things in this world that do us more good and less evil than birds taken as a group. The Museum does not recommend the destruction of any birds ; there is unfortunately no need to do so. We still have too many men ready to destroy and too few to preserve. Over half the destruction of bird life at present taking place in Britain is directly harmful to our best interests, and only a fraction of it benefits us in any way. By the feeding of birds in hard weather, the provision of nesting-boxes for insect-eating species, and generally keeping their welfare at heart, not only is a lasting pleasure found but a service is done to the birds and also to the country, which reaps untold benefit from their activities. Rare birds deserve special vigilance, for as their extinction is a scientific calamity so is their preservation a real contribution to science.

There are two classes of these which anyone who cares enough may do much to save. The first comprises birds slaughtered for plumage. In Britain and abroad great efforts have been made to put an end to the appalling barbarities with which plumage is obtained, and not without success ; but ultimately the suppression of these practices rests only with the public. It is cheaper and easier to act with cruelty ; in the wild places there can be no one to interfere, and so long as this plumage continues to be bought, so long must birds continue to be brutally done to death for the sake of it. By buying only ostrich feathers and such others as are *known* to be obtained without cruelty the atrocities will be struck at their root—which is simply money. Examples of plumage whose import is now prohibited, though it still goes on and will go on till their sale also is stopped, are exhibited in the large case adjoining.

Among rare birds of the second class the stuffed Golden Oriole, Pine Grosbeak, Roller, Bee-eater and Hoopoe, exhibited on the upper shelf, are the most striking and lamentable examples of the spirit which bird protection must bring to an end. All are rare but not extremely unusual visitors to the British Isles, whose brilliant plumage, far brighter than these faded skins can suggest, causes most of them to be persecuted and shot from the moment their arrival is noticed. All except the Roller and Pine Grosbeak have attempted to breed with us, the Bee-eater only once (Midlothian, June 1920), but the other two pretty frequently. They are not often allowed to succeed ; as long as commercial dealing in rarities is permitted they possess a money value which has more attraction for gunners than the rare pleasure of watching them alive.

The use of bird-lime, of braces on decoy birds, and of very small cages was forbidden by Sir Harry Brittain's Act of 1925, and these practices are now being put down by the Royal Society for the Prevention of Cruelty to Animals and other bodies. Oil floating on the waters, unguarded lighthouses and other abuses of modern civilisation cause a tremendous destruction of bird life, and offer as tremendous an opportunity for all lovers of birds to help in bringing them to an end.

Cuckoo Exhibit.

The Cuckoo (*Cuculus canorus canorus*) is only one species of the large and widely-distributed order *Cuculidae*, many members of which build their own nests and rear their own young, though they may in some cases eat other birds eggs. Of the parasitic cuckoos some, like the Indian Koel (*Eudynamis honorata*) do not eject their nest-companions, but grow up peaceably with the rest of the brood ; in others the legitimate young are recorded to have been ejected not by the cuckoo, but by their own parents instead ; others behave like our own bird, possessing a highly sensitive hollow in the back, which, when touched, sets up a severe itching and causes the newly-hatched cuckoo to eject the irritating object, whether an egg or young bird, by staggering backwards up the side of the nest and causing it to roll down. The young cuckoo does not at this stage know what it is doing, and usually remains blind long afterwards. In time the sensitiveness disappears, and after this no further attempt is made to eject anything which is placed, or has managed to remain, in the nest.

The parasitism of the cuckoo is not so extraordinary as it is often thought to be. Various hawks, including the Kestrel, and particularly the Hobby, habitually lay in the nests of crows and other birds. Two hens of the same species occasionally lay in one nest, and the red-legged partridge will deposit its eggs on top of those of the common species. The starling often drops its egg on the lawn if its nest is not ready ; from this it is only one step more to placing it among the eggs of another, to which practice the cuckoo has gone over entirely. All the steps between that and normal breeding are traceable.

It used to be thought that the cuckoo laid her egg on the ground and carried it in her bill to the appointed nest. This theory, which is illustrated by the accompanying case, has lately been shaken by the observations of Mr. Edgar Chance and others, who have shown beyond all shadow of doubt that the cuckoo's usual practice is to lay quite naturally in the nest itself. The question now is whether the cuckoo ever lays on the ground and carries her egg to the nest ; on this ornithologists are still divided. Cuckoos'

eggs are often discovered in situations where it seems quite impossible for the bird to have laid them herself; at the same time no absolute proof is forthcoming, such as has been obtained for the alternative method. A cuckoo, moreover, has been known to enter a nesting-box through an aperture only $2 \frac{1}{8}$ by $1 \frac{9}{16}$ inches, and lay inside it. A dummy box, made to exactly the same measurements throughout, is exhibited in this case. When a cuckoo has been seen carrying an egg, this has usually proved to belong to one of her victims, for she often, though not invariably, removes one of the rightful eggs at the same time as she inserts her own.

The well-known cry is delivered with the bill shut. The hen uses a loud coarse bubbling call; her sphere of influence includes the territories of many males, for females are in a minority and are polyandrous by custom. They are capable of laying up to twenty or more eggs in a season, and they prefer to specialise in a single type of victim, from which they are known to observers as meadow-pipit cuckoos, robin cuckoos, reed-warbler cuckoos and so on. The eggs, which vary enormously, are small for the size of the bird and often resemble the foster-parents'. When they do not they run the risk of detection, though how often cuckoos' eggs actually get ejected is by no means clear.

The migration of the cuckoo is still very imperfectly known; it leaves very early, and from the fact that a British ringed bird has been found in Italy, one marked young in Saxony was reported the same autumn from an island in the Aegean, and a third, ringed in the nest in Ayrshire on July 7th, 1925, was reported in less than a month from South Germany, it is suspected of migrating south-east, instead of south-west like other summer migrants to Britain. The parents, which leave long before the young, may not follow the same route.

Bird Migration Exhibit.

The great majority of British birds are in the strict sense migratory. There are areas where they breed and areas where they spend the dead season ; the two do not often coincide. In the Swallow or the Grey Plover they may lie over six thousand miles apart, for it is one of the most striking points about migration that the birds which breed farthest north are in many cases the ones that travel farthest south during our winter, passing far beyond the tropics. Such a splendid flier as the Alpine Swift seems physically much better fitted for long journeys than the skulking Corncrake (exhibited beneath him) which is rarely seen to fly at all during its stay with us. Yet the Corncrake ranges from the Arctic Circle to the Cape ; the Alpine Swift only half as far, from southern Europe to central Africa. But the Red-necked Phalarope, which breeds, in small numbers and incessantly persecuted, as far south as Scotland and Ireland, winters principally on the Mediterranean. England itself forms a part of the winter quarters of certain hardy northern species like the Brambling. Others neither breed nor winter here in any numbers, but pass through regularly on migration. An excellent example is the Ruff, which is constantly noted at the most unlikely places, where a sewage farm is kept under observation at the proper season—for instance at Reading. On Fair Isle, a little rock between the Orkneys and Shetlands purely Asiatic species are constantly met with. The Grey Plover, though generally separated on account of its minute hind toe, belongs to a group containing several of the most famous migrants. It ranges over a colossal area, from Arctic Russia, Siberia and America in summer to South Africa, Australia, and Brazil. It passes through Britain regularly on migration, but usually makes no long halt with us. The American Golden Plover (*Choradrius d. dominicus*) a slightly smaller bird of similar build, performs some of the most remarkable migrations known. The old birds follow entirely different routes in autumn and spring, making a sea-crossing of about 2,400 miles, apparently without a rest, from Nova Scotia to South America, and returning overland to breed. The curious and significant fact has lately been established that the young birds, which go south later than the adults, follow

this overland route their first autumn. Not only do the adults go by one route and return by a different one, but the young, travelling to the same winter quarters as their parents, take an entirely different path. The subspecific Eastern or Asiatic Golden Plover (*C. d. fulvus*) makes a two-thousand mile sea-crossing from Alaska to Hawaii with no possible rest on the way, and even reaches New Zealand. Both have several times wandered to Britain.

But migration is not only over long distances. Twites which appear in southern England in winter may have travelled only about two hundred miles; Curlews migrate from the moors to the nearest coast and need rarely cover more than forty miles on the journey; mistle-thrushes which drift to the hills after the breeding season, and meadow-pipits, which may only wander from moorland to lowland or may cross to Portugal, are also migrants. Of the few completely stationary species among our hundred and forty residents the Green Woodpecker may be taken as typical. It is worth observing that most of this class live chiefly on insects.

Comparatively little is known even of the facts and statistics of migration, and next to nothing of its cause. The emigration of birds like the ring-ousel which could undoubtedly stand our winter, the failure to migrate of species which would be expected to do so above all others, such as the Dartford Warbler; the wandering during our winter of Arctic terns to the very fringes of the Antarctic ice and many other circumstances throw doubt upon the facile explanation that they migrate simply for food. The best general survey of the subject will be found in Dr. A. Landsborough Thomson's *Problems of Bird Migration* (London 1926); the other standard modern work is Eagle Clarke's *Studies of Bird Migration*.

BIRD-MARKING.

Marking as a means of tracing the journeys of birds was first systematically employed with young woodcock on the Duke of Northumberland's estates at Alnwick in 1890, Since then the system has spread and been elaborated; birds are now ringed in most parts of Europe, except the Latin countries, and in Canada and the United States. The most important scheme, at any rate in Western Europe, is the *British Birds* enquiry conducted by Mr. H. F. Witherby. Between 1908 and 1926 roughly 200,000 birds, of over a hundred species, were marked in the British Isles, and of these 164,012 bore Witherby rings. The rings are made in five sizes to fit the varying thickness of the tarsus, No. 1 serving for all birds up to the size of chaffinches or nightjars; No. 2 for lapwings, blackbirds and thrushes; No. 3 for cuckoos, hawks, and crows; No. 4 for ravens, coots, and wild duck; and No. 5 for cormorants and herons. Some people have a prejudice against the method, fearing that it may hurt or inconvenience the bird. There is not the slightest foundation for this, and in fact if great care were not taken to prevent such inconvenience the birds' behaviour would not be normal and any results obtained would be valueless. On this point the records give the best evidence, and although birds have been recovered at the age of twelve or even as much as sixteen years, none have shown the least trace of injury. The fact that they have lived so long and that others bearing rings have crossed the Atlantic and often reached South Africa shows beyond all doubt that the extremely light aluminium band does not cause any inconvenience.

The method of marking is illustrated by the ringed birds—a swallow, a mistlethrush and a razorbill—exhibited in this case. How records are kept, and the instructions issued to markers, will be seen from the *British Birds* schedule the front and reverse sides are framed together in this exhibit. For the sake of example the schedule has been filled in with details of some actual records obtained. But in ordinary use the schedule would be cut up when it reached the office and the history of each ring filed separately in its proper place.

Three hundred ringed British native birds had up to the middle of 1926 already been recovered abroad. Of

these Portugal and France had each reported more than a hundred ; Spain had yielded thirty, and the remaining records were exceedingly scattered. Swallows from Staffordshire, Lancashire, Yorkshire, Berkshire, Ayrshire, Stirlingshire and South Wales have reached South Africa, and a Cardiff nestling was found in December 1922 in the Belgian Congo ; these and other records are marked on a map forming part of this exhibit.

About 100 White Storks ringed in Germany, Hungary, and Denmark have so far been recovered in Africa, the majority in the extreme south-east and the rest mostly in the eastern half. Numerous European records show that in the autumn most follow the south-easterly path towards Asia Minor, though a few go south-west through Spain. Well over a hundred have returned to Europe in succeeding summers.

A black-headed gull marked as a nestling by the German ringing station at Rossitten on the Baltic crossed the Atlantic to Barbados within four months, and a Common Tern from Maine, U.S.A. was found eventually in West Africa on the delta of the Niger.

An October-ringed Wigeon from Warwickshire travelled over the extreme breadth of Europe to Uralsk north of the Caspian Sea.

Many summer migrants have been proved to return in succeeding summers to the exact spot where they were hatched. Swallows alone have done so in 21 cases with us : in Hungary one used the same nest six years running. A minority of records show that some return to a different part of the country, or even to another country altogether : how frequently this happens is not yet clear, but native British ducks have several times been found breeding in Scandinavia.

Other less sensational records have added greatly to our knowledge of birds. Ringed chaffinches, starlings, yellowhammers, robins, dunnocks, greenfinches, blackbirds and others have been captured again and again, some over twenty times at one spot. It has been conclusively shown that many if not most of these remain stationary in England at all seasons, though in winter starlings, for example, are strongly reinforced from abroad, birds from Germany, Denmark, Russia, Sweden and elsewhere having been reported in the British Isles.

Marking throws light on the movements of birds, without knowledge of which bird protection in a wide scientific spirit can never be achieved, and also on the number of years they live and other questions not so obviously connected with it. The value of the results as a guide depends chiefly on the number of them, and the help not only of more keen observers to take part in the marking scheme but of the general public in reporting at once the number and details of any marked bird found, whether dead or alive, are very necessary for its complete success.

Species and Sub-species more or less confined to the British Isles.

All the birds in this case are represented in the British Isles by distinct races which breed nowhere else, or, in some instances, are shared as breeding inhabitants with the nearest fringes of the Continent.

The Red Grouse is the only full species peculiar to the British Isles ; it has lately been acclimatised abroad by human agency. The remainder are all divided into various sub-species, one or more of which are peculiarly British. A list of their names, English and scientific, together with their precise status, is given below. All are represented by specimens in this case (which do not, however, necessarily belong to the particular sub-species concerned) except those confined to the Northern Isles of Scotland, the Scottish Crested Titmouse, and the British Willow Titmouse. The characteristics by which the British sub-species is distinguished from the Continental are generally slight, comparative, and only appreciable by experts. They are, as a rule, rather smaller, duller, or darker than the European forms ; but in the British Lesser Black-back the mantle is decidedly lighter, while the Shetland and St. Kilda Wrens are much larger than the parent stock, and the British Great Titmouse and Scottish Crossbill possess stouter beaks. The Pied and Yellow Wagtails, Coal Titmice, both British and Irish, the Wrens of St. Kilda and the Shetlands, and the British Dipper are generally easy to recognise in the field.

	KNOWN RANGE IN BREEDING SEASON.
British Jay. <i>Garrulus glandarius rufitergum</i> (Hart.)	Great Britain only.
British Bullfinch. <i>Pyrrhula pyrrhula nesa</i> (Matthew & Iredale).	British Isles only.
British Goldfinch. <i>Carduelis c. britannica</i>	British Isles only.
Lesser Redpoll. <i>Carduelis linaria cabaret</i> (Mull).	British Isles, but also Alps, and elsewhere.

		KNOWN RANGE IN BREEDING SEASON.
Scottish Crossbill. <i>scotica</i> (Hart.).	<i>Loxia curvirostra</i>	Scotland only.
Rock Pipit. (Montagu).	<i>Anthus spinoletta petrosus</i>	British Isles, also N. France and per- haps Norway.
Yellow Wagtail. (Bonaparte).	<i>Motacilla flava rayi</i>	British Isles, but also W. Holland and W. France.
Pied Wagtail. (Gould).	<i>Motacilla alba yarrellii</i>	British Isles, but also nearest parts of Continent.
British Treecreeper. <i>britannica</i> (Ridgway).	<i>Certhia familiaris</i>	British Isles only.
British Nuthatch. (Blyth).	<i>Sitta europea affinis</i>	England and Wales only.
British Great Titmouse. <i>newtoni</i> (Prazak).	<i>Parus major</i>	British Isles only.
British Blue Titmouse. <i>obscurus</i> (Praz).	<i>Parus caeruleus</i>	British Isles only.
British Coal Titmouse. (Sharpe & Diss.).	<i>P. aterbritannicus</i>	Great Britain and Ulster.
Scottish Crested Titmouse. <i>scoticus</i> (Praz).	<i>P. cristatus</i>	Scotland only.
British Marsh Titmouse. <i>dresseri</i> (Stejn.).	<i>P. palustris</i>	England and Wales only.
British Willow Titmouse. <i>kleinschmidti</i> (Hellm).	<i>P. atricapillus</i>	Great Britain only.
British Long-tailed Titmouse. <i>caudatus roseus</i> (Blyth).	<i>Ægithalos</i>	British Isles only.
British Golden-crested Wren. <i>regulus anglorum</i> (Hart.).	<i>Regulus</i>	British Isles only.
Dartford Warbler. <i>provincialis</i> (Lath.).	<i>Sylvia undata pro-</i>	England, but also probably Channel Isles and N.W. France.
British Thrustle. <i>clarkæi</i> (Hart.).	<i>Turdus philomelus</i>	British Isles only.
British Stonechat. <i>hibernans</i> (Hart.).	<i>Saxicola torquata</i>	British Isles only.
British Robin. <i>philus</i> (Hart.).	<i>Erithacus rubecula melo-</i>	British Isles only.
British Dunnock. <i>occidentalis</i> (Hart.).	<i>Prunella modularis</i>	British Isles only.

		KNOWN RANGE IN BREEDING SEASON.
British Dipper.	<i>Cinclus cinclus gularis</i>	Great Britain only.
(Latham).		
British Pied Woodpecker.	<i>Dryobates</i>	Great Britain only.
<i>major anglicus</i> (Hart.).		
British Barred Woodpecker.	<i>D. minor</i>	England and Wales,
<i>comminutus</i> (Hart.).		also Holland.
British Tawny Owl.	<i>Strix aluco sylvatica</i>	Great Britain only.
(Shaw).		
British Lesser Blackback.	<i>Larus fuscus</i>	British Isles, but also
<i>affinis</i> (Reinh.).		Färoes and W.
		France.
British Black Grouse.	<i>Lyrurus tetrix</i>	Great Britain only.
<i>britannicus</i> (With. & Lonnb.).		
British Red Grouse.	<i>Lagopus scoticus</i>	Great Britain only.
<i>scoticus</i> (Lath.).		
Scottish Ptarmigan.	<i>Lagopus mutus</i>	Scotland only.
<i>millaisi</i> (Hart.).		
British Golden Plover.	<i>Charadrius</i>	British Isles only.
<i>apricarius oreophilus</i> (Meinertzhagen)		

In addition, there are the following sub-species peculiar to Ireland :—

- Irish Jay. *Garrulus glandarius hibernicus* (With. & Hart.).
 Irish Coal Titmouse. *Parus ater hibernicus* (Ogilvie-Grant).
 Irish Dipper. *Cinclus cinclus hibernicus* (Hart.).
 Irish Red Grouse. *Lagopus scoticus hibernicus* (Kleinschmidt).

And the following peculiar to the Northern Isles :—

- Shetland Starling. *Sturnus vulgaris zetlandicus* (Hart.).
 Hebridean Thröstle. *Turdus philomelus hebridensis* (Clarke).
 St. Kilda Wren. *Troglodytes troglodytes hirtensis* (Seebohm).
 Shetland Wren. *T. t. zetlandicus* (Hart.).

Economic Ornithology.

Economic Ornithology is not included amongst the special exhibits of this museum. Attempts have been made elsewhere to group together the birds particularly useful to agriculture, but they have proved unsatisfactory. The subject is much too complicated and has not yet been scientifically investigated fully enough to justify such dogmatic treatment. The best-known economic ornithology exhibit in England includes the Jay, Pheasant, Magpie and Rook, which are undoubtedly liable to do more harm than good, among the "specially beneficial" kinds. Again, a bird extremely useful to the potato-grower may be purely neutral so far as the dairy farmer is concerned, and a serious pest among the corn, or *vice versa*. Some species, such as the blackbird and certain titmice, though extremely useful for ten months of the year, may inflict considerable damage during the remaining two. It resolves itself usually into a question of balancing the good against the harm, and to do this correctly in a particular case is an extremely difficult matter.

It should never be forgotten that insects as a class are capable of inflicting infinitely more direct damage upon man than birds as a class, and therefore we have a plain interest in maintaining so far as possible the ascendancy of birds, which are beyond all doubt our greatest safeguard against plagues of the lower forms of life. Even if a bird seems to do more harm than good its destruction may pave the way for worse evils. A great part of the huge loss inflicted on our crops and property by rats, mice, moles and rabbits would be prevented if we ceased to persecute the birds and beasts of prey. The destruction of cormorants in order to improve a fishery has been known to lead to its calamitous decay, because the eels and other enemies of the fish concerned, which the cormorants had held in check, gained the upper hand at once.

A certain amount of loss is bound to be suffered from birds just as it is suffered from rain, wind, frost and other things which serve a useful purpose on the whole and cannot be massacred at a man's whim when they happen not to suit him. To imagine that all the damage done by birds could

be avoided, is to want to have it both ways, like praying for rain to grow your hay and cursing it when it falls before hay-making is over. Taking birds altogether as a factor in man's existence they do infinitely more good than harm; to wish to get rid of all that are not 100 per cent. useful, is a Utopian dream, and all attempts to put it in practice have always led and will always lead to a much worse state of affairs than before.

In this Museum guidance is offered by coloured labels distinguishing those birds which on the whole are strictly or mainly useful to man, or can be considered harmless, not directly affecting him one way or the other. A few others which do an appreciable amount of damage without any obvious services to balance it are also recommended for protection; it will be found on investigation that these species, Kingfisher and Heron for instance, though they may be the most conspicuous, are not by any means the most serious enemies of trout or whatever it happens to be. They take their share openly and so bear the odium of all those other agencies—pollution, disease, various fishes, otters, and so on—which do much more damage, but do it in secret. It should never be forgotten that whether a creature produces two offsprings or a million, not more than two to each pair can be allowed to survive without such a terrific increase that a plague becomes inevitable.

Notes.

WHAT THE MUSEUM NEEDS.

Before presenting specimens to the Museum it is desirable to consult the Curator. Among the birds the most urgent requirements are Titmice, Warblers, Finches and small birds generally ; also the Swans, Geese, Grebes and various other species not already well represented. The Museum does not wish to encourage the killing of birds as specimens, but good specimens already obtained which help to fill gaps in the British series, or are interesting in themselves, will be welcome. So also will gifts increasing the value of the special exhibits, or suggesting new ones, for their scope is capable of great extension, given the necessary material.

The sort of gifts that are not desired may also be indicated ; these include, roughly speaking, freaks and domesticated birds ; exotic forms jumbled indiscriminately without proper data, or displayed as fire-screens or in supposedly ornamental designs ; further supplies of British birds' eggs, unstuffed skins, and birds of which there are already specimens on show ; and any that are so poorly cased or set up as to be doubtfully fit for exhibition. Unless the redeeming circumstances are exceptional the Museum is unlikely to be able to find room for additions in these categories.

The Museum strives to fulfil a high educational ideal ; it should not be regarded as a last refuge for white elephants. By bearing this in mind future donors will be helping materially to improve the collections, and will earn the thanks both of those who keep the Museum and those who use it.