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Uses of Egg Collections: Display, Research, Identification, The Historical Aspect.

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This paper is based on a talk I delivered to the one-day seminar on egg collections at Tring Museum on 15 February 1990, which has been discussed in the previous issue of this journal (Sutcliffe, 1993). I have been in charge of the egg collection at Tring, which is one of the two largest in the world, for over 20 years, and therefore may have more experience of eggs on a world basis than anyone else in Britain.

Display

Display is, in my view, the least important use for egg collections, and the public display of real eggs is to be discouraged. Eggs exposed permanently to light will inevitably fade, and after a period of time, will become worthless. In Britain at least, egg displays in Museums appear to have an unflinching attraction for kleptomaniacs; for some reason the Americans do not have this problem. Lloyd Kiff, curator of the egg collection at the Western Foundation of Vertebrate Zoology in California (the other of the two largest collections), told me that he was often faced with blank incredulity when he discussed the collection with visitors. "Why on earth should anyone want to collect bird's eggs?" was apparently a frequent comment.

Tring Museum has a cabinet of British birds' eggs in glass topped pull-out drawers. For many years it stood immediately opposite the post card counter. Some years ago, when the new book shop was opened, the post card counter (which of course would have been permanently manned at all times when the Museum was open to the public) was dismantled. Within a week, the egg cabinet was broken into by children, and eggs stolen. It has now been moved to the entrance hall, where it is once again under constant supervision. However, I presume that many Museums do feel it is important to maintain egg displays, and this raises the problem that if all such displays are self-destructing, from whence shall come supplies of new material? For this reason, I am of the opinion that collections of eggs which are in any sort of suitable condition should not be destroyed, but should be placed in some suitable storage for the future.

Research

Research is in my opinion one of the most important uses of egg collections. Generally speaking, the researchers who have tended to use the

egg collections at Tring during the period when it has been in my care have been those who were conducting monographic studies of a particular species, and wished to examine every available specimen in every museum. The information they are looking for includes measurements and shell weight, but most importantly, dates, localities, identities of collectors and so on. It should be pointed out that, unlike collectors of British birds' eggs, who are egg collectors and very rarely ornithologists, those who build up collections of foreign eggs are nearly always ornithologists, and very rarely egg collectors.

I am frequently asked, why do you need so many specimens? Isn't one blackbird's egg the same as any other? The answers are, yes, we do need a lot of specimens, and no, they are not all the same. It is only when one examines a very large collection that one realises the problems of identity that can arise, and can appreciate the range of colour and shape which can occur. All patterned eggs vary to a tremendous degree.

Nor is there justification for Peter Robinson's opinion (Sutcliffe, 1993: 20) that most research work can be done by photography. This shows some lack of understanding of taxonomic principles. Bird's eggs actually display an extremely small range of colours in a very great number of subtle variations in shade, and identification of eggs often depends on distinguishing such subtle differences. Present day colour photography is quite inadequate to cope with these variations. Almost any book which contains colour photographs of eggs demonstrates how utterly inadequate photography is in conveying any real idea of the appearance, colour and texture of an egg.

It is this variability that makes them useful for studying taxonomic and genetic theories. for example: the eggs of the Robin (*Erithacus rubecula*) are typically white or pale pink in ground colour, with reddish-brown dots and markings. The full range of variation, however, goes from pure white (unmarked) to a dark reddish brown. The eggs of the race *E. r. superbus* from the Canary Islands (sometimes called the Superb Robin) have been described in the literature as being particularly "richly marked", and in a small series of eggs this would indeed appear to be true. But, if a long series is examined, one which contains a sufficient number of eggs to allow one to see the full range of variation (and one must remember that specimens showing the extreme ends of the range are very rare), it can be seen that eggs agreeing in every respect with those of the Superb Robin do in fact occur in the mainland races.

The only thing that is remarkable about those from the Canary Islands is that they are nearly all like that. One must assume that egg colour is genetically controlled; the studies of many researchers on variation in the colour of cuckoo eggs has suggested strongly that this is the case. One explanation, therefore, is that the population of the Canary Islands was descended from a very small number of colonists, or even from a single female, who quite by chance happened to be carrying the gene for these strongly marked eggs. There is of course, no way of proving this, but it does fit in with the view that the Canary Islands were of oceanic origin, never connected to the African mainland and received their avifauna by limited aerial colonisation.

The question as to whether eggs are a useful guide to taxonomic relationships in birds is a vexed one, and one which has been argued about over the years. Unfortunately, in my view, too much weight has been attached to David Lack's paper on the eggs of the Turdidae which appeared in *The Ibis* in 1958. He expressed the opinion that egg colour is valueless as a taxonomic character, because he found that in the Turdidae egg colour cut across generic boundaries and appeared to be entirely adaptive; eggs of closely related species were often very different in colour, and those of unrelated species often similar. While not refuting his conclusions insofar as they apply to this family, it is unfortunate that his conclusions have been assumed by some people to apply to the eggs of all passerines. This is not so. The eggs of the Sylviidae present a totally different situation. In this family it is often difficult to distinguish the eggs of closely related species; but the eggs are absolutely distinguishable at a generic level. Not only are they distinguishable, but many of the genera are uniquely coloured, which one would not expect if the colour were purely adaptive. Thus the pink spotted eggs of the *Hippolais* warblers resemble no others, and the brownish-pink specked eggs of *Locustella* and the green-spotted eggs of *Acrocephalus* are also quite distinguishable. The Thick-billed Warbler *Phragmaticola aedon* has in recent years been placed in the genus *Acrocephalus*, but its egg in no way resembles eggs of that genus. It is, in fact, almost indistinguishable from eggs of *Locustella*. Contra Lack, therefore, eggs can be useful in some cases, and should not be totally ignored as a source of taxonomic help.

Identification

Identification of bird eggs is a very complex subject, in fact it is sometimes more an art than a science. I am always surprised at the number of people who seem to assume that identifying an egg is the same as identifying a bird - you look at it and you say "Oh yes, it's a so-and-so". It is of course true that the eggs of some birds are absolutely distinctive. An ostrich egg, for instance, could never be mistaken for anything else, nor could the egg of a diver. The 4 species of diver all lay very distinctive brown eggs with black spots which are unlike those of any other family. The eggs of 3 species, however, are distinguishable from each other only by size. But here we have a problem. The average egg size of the 3 commoner species, the Red-throated, the Black-throated and the Great Northern, relates to the size of the birds, thus the Red-throated is the smallest and the Great Northern the largest, but it does not follow that every egg is assignable to species on size. The eggs of most bird species vary in size by up to 25% on either side of the average. This means that there is a very considerable overlap in the size ranges of the three species. Eggs of the White-billed Diver are probably indistinguishable from those of the Great Northern, but they are very rare in collections. Tring Museum has none, and I have never seen one, so am unable to comment.

Several factors complicate the identification of many birds eggs. These are the extreme variation in colour and pattern occurring within the species, coupled with the fact that similar egg-colours and patterns can occur in totally unrelated birds. This is complicated even more by the possibility of

abnormal or freak eggs which can occur from time to time. These may be totally unlike the normal eggs of the species but may well resemble those of some other bird. The olive eggs of the Nightingale look pretty distinctive and very different from the blue eggs of the Indian Chats formerly placed in *Larvivora* but now merged in *Luscinia*. Occasionally, however, the Nightingale will throw up a blue clutch which is virtually indistinguishable, and indicates that the eggs are basically similar, a blue ground with, in the case of the Nightingale, an overlying brown pigment which may occasionally be absent. Very occasionally, it would appear that such freaks become stabilised. The eggs of the *Hippolais* warblers, as I mentioned earlier, are very distinctive spotty pink eggs, but the eastern race of the Booted Warbler (*H. caligata*) produces an egg which is pale mottled grey. If one did not know, one would never guess that it was a *Hippolais* egg.

This situation is very rare indeed, I know of only two other instances of striking difference of this kind between different races of the same species; these are the Dark Grey Bush Chat *Saxicola ferrea* of India, and the Blackbird. The Chinese Black-bird (*Turdus merula mandarinus*) has consistently pink-ground eggs rather resembling those of a Mistle Thrush, and the races of southern India have much darker and glossier eggs than those of European populations. In the last instance, it is however possible that the various populations are almost, if not actually, specifically distinct.

For these reasons, we do not guarantee the identity of any egg brought in, but nearly always qualify it by phrases like "most probably the eggs of..." or "not distinguishable from..." or "likely to be..." and so on. Nevertheless, it is also true that when one has worked with eggs for a long time, one develops a sort of "sixth sense" in regard to identification. Many times I have had to check an egg supposed to be the egg of such-and-such, and although it may agree fairly well in colour, shape and pattern, I am conscious that there is something "wrong" with it. One often cannot say exactly what, but instinct born of years of experience tells you that it isn't what it is supposed to be.

We sometimes have to identify eggs for Customs and Excise. These are usually eggs which are being imported, and the identity has to be checked. Identifying eggs in this context is notoriously difficult, as one often has little idea of the origin of the eggs (the Customs tend to be reticent on this point). Most raptor eggs, for example, cannot be identified with certainty on a world basis; but knowing the country of origin narrows down the possibilities considerably. Only a couple of weeks ago, Customs brought in some eggs originating from an aviary in Florida, which they believed to be pigeon eggs, in the hope that I could identify the species. Well, of course pigeon eggs are oval, glossy and white, and only differ in size. I had to say that had they been able to tell me that the eggs had been wild taken on (say) Madeira, I could have checked the species known to occur on the island, and see which one laid eggs nearest to these in size, but as it was all I could do was confirm that they were pigeons'.

Another example of the sort of difficulties involved was demonstrated a number of years ago when the RSPB brought us a clutch, believed to be Kite eggs, but which the owner claimed were Buzzard. In a laid-out series, Kite

and Buzzard eggs look very different, but on comparing individual eggs, it can be found that every single Kite's egg can be matched by one of a Buzzard. In other words, Buzzard has a much greater range of variation, and the range of Kite is contained within that of Buzzard. Yet again, Dr. Hilary Fry sent me the remains of a hatched tern's egg from an island in the Persian Gulf, and asked me to identify it. He was sure it must be one of three species but didn't know which. Here again, in a series, the eggs of the three terns looked fairly distinctive, and some eggs could be assigned with reasonable certainty to one of the three species. But there were many duplications, and I found that eggs matching the one sent were to be found within the ranges of all three.

Very strange cases sometimes occur. Levaillant's Cuckoo (*Clamator levaillantii*) lays blue eggs and parasitises blue-egged babblers in West Africa. In one very small area, some of the babblers produce rose pink eggs instead, the only instance I know of a bird laying an egg quite like this. Not to be outdone, the Cuckoo has in this area produced a pink egg to match.

Eggs of the Great Auk

Nearly every year we receive at least one enquiry from a member of the public who believes that he has an egg of the Great Auk. In some cases these have been cherished family possessions for years, and it is always very sad to have to disillusion the person. Most frequently they turn out to be Guillemot eggs, which are very similar in shape and pattern, but about half the size. Other candidates include ostrich, emu, goose and swan. Once I had to go down to Christ's Hospital school to examine a supposed Great Auk's egg in the collection there. It proved to be very accurate in size, shape and pattern - but it was made of papier mache. What is not always realised is that 75 eggs of the Great Auk are known to exist, all of which are individually distinguishable on the basis of the pattern of their markings. Nearly all of them have been known since the middle of last century and their histories documented in considerable detail. A number have changed hands in the sale rooms on more than one occasion. Monochrome photographs of all 75 have been published (Tompkinson, 1966) It is possible, but most unlikely, that any unknown and undocumented specimens still exist. I referred to a papier mache egg. It was in fact, quite a common practice during the nineteenth century for replicas of Great Auk eggs to be made, and kept in private collections, in view of the great rarity of the originals. Many of these were cast in plaster, and were deliberately made as replicas of specific known specimens. There is also an amusing story to be told. A famous collection of the early nineteenth century was that of J.D. Salmon. When he died, his collection was left to the Linnean Society. Many years later, the Great Auk's egg was found to have been removed, and replaced by a swan's egg which had had spots painted on it.

Age

Another very vexed question is that of the age of bird's eggs. No test has yet been discovered for dating an egg with any accuracy. Of course, very fresh eggs will look new, and very old eggs will become rather dull and dusty, but a

lot depends on how carefully they were prepared, and the conditions under which they have been stored. Eggs stored in the damp will become mouldy, those not stored in absolutely air-tight containers will eventually, after many undisturbed years, become covered with dust. A well-prepared egg, stored under ideal conditions can remain looking remarkably young even after 150 years. The only good guides I know to ageing are fugitive pigments, and these are of very limited application. In the eggs of sparrowhawks and goshawks (even if kept in the dark) the bright blue ground colour completely fades of 20-25 years, and all eggs in older collections have a chalky white ground.

Historical Aspect

The second half of the nineteenth and the first half of the twentieth centuries were the great (or as some would say, the bad) era of egg collecting. People collected eggs, much as today they collect stamps, gold coins, 78 rpm gramophone records, Chinese jades, etc. (I know one man who collects lawn mowers!). Eggs had been collected as far back as the seventeenth century, but as far as I am aware nothing from this period has survived. The oldest dateable egg we have in the collection is a gannet's egg collected in 1807, but a number of undated specimens may well be older. The Montague Collection which we received in 1813 probably contains eggs dating from the latter part of the eighteenth century. In the heyday of collecting, specimens were exchanged, bartered and sold at auction rooms; many very large collections were built up and then auctioned when the owners died. Many famous collections were lamentably broken up in this way, others remained intact and were donated or sold to museums where they formed the basis of the collections there. One very famous collection, the Nehr Korn Collection, built up I believe almost entirely by purchase, is now in a museum in Germany, and contains many rarities. There are indeed still some bird species from generally uncollected corners of the world of which the only known eggs are in the Nehr Korn Collection. During the lifetime of a collector, many eggs would be bought and sold, and thus a great many specimens changed hands many times before reaching their final resting place. Many specimens vanished, for one thing is certain that the extant collections, extensive though they may be, represent only a tiny fragment of the material that was being actively collected.

Collections vary very widely in their scope and documentation. Collectors, like Jourdain for example, carefully noted not only date and locality, but evidence of incubation, detailed descriptions of the nest and nest site, and much other valuable scientific information - often far more valuable than the eggs themselves. (If he were alive today, Jourdain would probably have been an enthusiastic participator in the BTO Nest Records scheme). In other words Jourdain was primarily an ornithologist, and his egg collection, large though it was, was regarded by him as an aid to study rather than as a collection in its own right. This what all egg collections *should* be.

At the other end of the scale was Count von Rödern, a German aristocrat whose collection was bought by Lord Walter Rothschild towards the end of last century, and is now at Tring. This consists mainly of single eggs, not

clutches, sometimes with the dates and localities (usually approximate) scrawled on them in pencil. However, Rödern deliberately sought out unusual varieties, and in a number of instances his collection contains wider ranges of variation within a species than the collection of any other single collector.

Then there was Henry Munt, who only collected eggs laid in captivity, and only if they were pure white. He must have built up a considerable network of correspondents who bred parrots, pigeons and so on, and obtained from them all their addled eggs. As such, his collection is a remarkable document of the birds in his chosen families which were being bred in Britain at the time.

Collectors ranged from the monumental to the insignificant. We have some eggs, for instance, collected by Audubon. We have an Arabian ostrich egg collected by the famous explorer Charles Doughty and owned for a time by Lawrence of Arabia. On the other hand, nothing appears to be known about Mr. Foottit other than that he once owned a large collection which was subsequently dispersed. In the early days of this century, S.A. Buturlin travelled to the mosquito-infested swamps of the Kolyma delta in eastern Siberia to bring back the first known eggs of Ross's Gull. We have some of them here, and I for one, find a tremendous thrill in holding one in my hand and thinking of the romantic (and probably very dangerous) journey that lay behind their collection. We also have the first known clutch of eggs of the Curlew Sandpiper, taken and described by Henry Popham, another very careful and meticulous recorder. They are still our only clutch of the species. These men were not the kleptomaniacs that in this day and age egg collectors are usually portrayed as being; they were serious ornithologists who travelled to far flung, and dangerous corners of the earth, to increase the world knowledge of species which at that time were little known, often describing nests and eggs for the first time. This is not encouraged today, which is a great pity in view of the fact that for over a third of the world's species of birds (many of which are rapidly vanishing) the nests and eggs have never been described or even found. I was told a ripping yarn some years ago, about a birdwatcher who went on an Ornitholiday to the Himalayas. Tramping along a mountain trail he saw a bird fly off to the side and settle on a nest some short distance from the path. He identified the bird, but being a loyal RSPB supporter, he knew that it was not "cricket" to disturb a bird on its nest. So, although he was itching to know what the eggs looked like, he passed dutifully on his way. On his return to England he made some enquiries and was stunned to be told that he was the first person ever to have seen the nest of that species, the eggs of which of course remain undescribed. Thus was an excellent scientific opportunity lost.

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