

Documentation and Conservation Status of Avian Collection of State Museum Lucknow: A Case Study

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Introduction

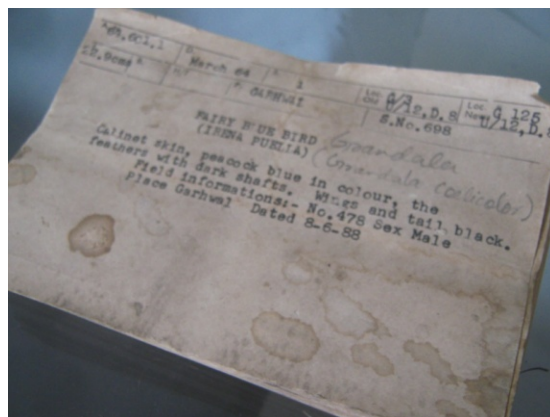
State Museum Lucknow is the fourth oldest Museum of India established in 1863. Before 1883 it functioned as a Municipal Institution then it declared as Provincial Museum. Since 1950 the provincial museum Lucknow has to be known as the State Museum Lucknow. Natural history section of State Museum Lucknow harbours one of the oldest, richest, as well as rare avian collection of India with more than four thousand specimens in acquisition including mounted as well as cabinet skin. Avian collection is the largest collection of Natural history section which is more than 130 years old and comprises of some critically endangered and threatened species. Today only about forty specimens are on display due to lack of display space rest kept in reserve collection mostly in the form of study skin for the purpose of research but hardly any such detailed research work had been carried out on this collection before the present study. Earlier, separate 'Bird Gallery' located in the central hall of the museum building, which consists of mounted specimens of nearly all the principal kinds of Indian birds arranged in the systematic order in the inbuilt showcase. Present study is done to document and study the conservation status of avian collection of State Museum Lucknow in order to provide detailed and correct information about this rich and rare avian collection and to suggest what to be done for its safeguarding. From time to time, detailed research may suggest that a species is more closely related to a different group of birds from that in which it is currently placed. In such case the birds may be moved from one to another (P.Christopher,1987).In present study many such examples were also recorded like many of the Niltavas were earlier given the generic name *Muscicapa*. Later some distinct differences have been recognized between the Niltava and the true *Muscicapa* (flycatchers) thus these birds were put in a separate genus "*Niltava*". Continued documentation and examination of

biological diversity will be essential to successful conservation efforts, museum collections and researchers will continue to be at forefront of this research (Winker 1991).

Documentation of Avian Collection in State Museum Lucknow: Followed by the first edition the Second edition of bird catalogue was published in Oct' 1889 by Mr. George Reid, Incharge, Natural history section of the museum. These birds were documented in the form of accession cards in 1964 with partial or insufficient information, so it was need to be documented again with more detailed information. There is no Sectional register available in the natural history section. There is a General Accession register (not in a good condition) in the Museum. The present deteriorated General Accession Register, Accession Cards and field slips of State Museum Lucknow, found to be the key for accurate information which are used to incorporate all the relevant information for preparation of Separate Sectional Register for avian collection that may be prepared manually and followed by automated system. On the basis of proposed study some new columns in the index cards may also be incorporated that will provide more information to the scholars and staff members. Digital photography has done to document the actual condition of specimens and it will also help in maintaining the records. The proper documentation would help in future scientific work as well as for proper display in exhibition.

Problems in Documentation System of State Museum Lucknow:

- Along with lack of information on cards, condition of cards was also not found satisfactory as these accession cards are about fifty years old. These cards become brittle, color of ink faded, color of paper changed due to high temperature, humidity, dust and dirt, improper keeping, pest attack, and thus need to be prepared again with improved format and good quality of paper.



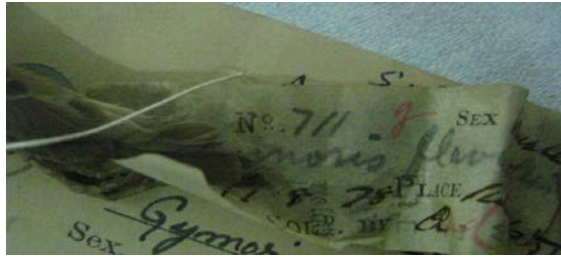
Pictures showing deteriorated condition of accession card

- Some important information did not included in the accession card and Sectional register from the field slip like name of the collector, date of the collection etc.
- Location has been changed but still old location is mentioned on Accession card.
- Column of Provenance often remain blank on card which should be written.
- Often sex of the Specimen whether male or female is missing.
- Photograph of the specimens were not taken. Dorsal and ventral view must be included. Condition of the specimen was not mentioned.
- Documentation missing proper classification of the specimen like phylum, Class, Family, genus, species etc. Sometimes only Common name is mentioned.
- Satisfactory description was not found and cards were provided with little information.
- Many specimens found to be wrongly identified as well as wrongly labelled.

Methodology:

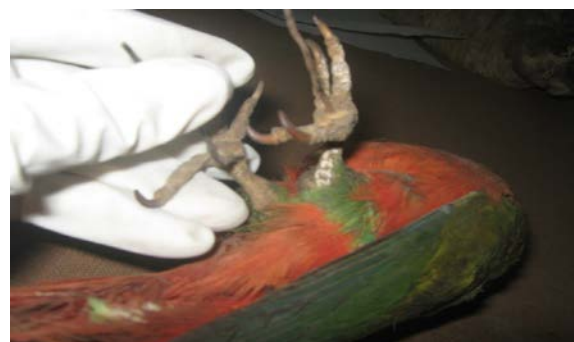
Prior to proper documentation, the avian collection studied in detail such as proper identification, conservation status and factors responsible for its deterioration. Specimens (cabinet skin) usually contain two tags one having Accession number, Serial Number and name of the bird. Another tag that is field slip tied to the feet of the bird at the time of collection containing some very important information like date of collection, place of collection, name of collector, sex of specimen, name of the bird and a number given to specimen at the time of collection.

As many of the birds in collection are hundred or more than hundred years old so as the field slip. They are very brittle and even some of them also turned into unreadable with time due to deterioration. During the documentation efforts have been taken to retrieve such information as far as possible. *The Value of a specimen depends on the information contained on its label. Study skins with these data can be used in the following types of analyses: geographic variation and taxonomy, seasonal and geographic distribution, zoogeography, moult, sexual dimorphism, and age/sex ratio. Specimen missing any of these basic data categories is of lesser research value* (Remsen, 1995). In Natural History museums or departments the absence of attention to its fundamental taxonomic function denies it the title 'Museum' and makes it 'an exhibition' or 'an educational centre' or whatever title describes its remaining functions (Hounscome V. M., 1984).



Deteriorated field slips containing information

Hundreds of new bird species have been discovered in the past decades, mostly through the accumulation and examination of specimens (Winker 1991). Thus Present study is done to document and study the conservation status of avian collection of State Museum Lucknow in order to provide detailed and correct information about this rich and rare avian collection to prepare Sectional register and index cards and to suggest what to be done for its safeguarding. Firstly taxonomic correction has been done, some minor and major changes has been recorded as a result. **For instance** Generic name changed like *Aethiopsar fuscus* to *Acridotheres fuscus*, trivial name changed like *Hypsipetes madagascariensis* to *Hypsipetes leucocephalus*, sometimes specific name found to be changed also like *Vanellus spinosus* to *Hoplopterus ventralis*. Total collection representing about 700 Genus, out of which 274 generic name, 245 trivial name have been changed. Out of total collection that is about 3969 specimens (except adjusted specimens) 236 specimens were found to be wrongly identified or labelled. These were wrongly identified due to lack of knowledge or resources whereas some were wrongly labelled and misplaced due to improper management. Whereas the specimen with proper Labelling and marking have minimum possibility of misplacing, wrongly labelled and wrongly identified.



Serial number written on feet of specimens with permanent ink

Specimen of Pink Headed Duck Rediscovered During Present Research Work: One very important finding was the Pink headed duck (*Rhodonessa caryophyllacea*) which was found with label of spot billed duck during this study. After a long exercise and references it was confirmed as *Rhodonessa caryophyllacea* (Pink headed duck). Specimen cannot be supposed to be wrongly identified rather it would have been misplaced and then wrongly labelled by lack of knowledge. As this specimen is one of the rare specimen having IUCN status as 'Critically Endangered' or may have globally extinct. Due to this wrong identification this rare specimen remain misplaced for a long period and got damaged. The condition of the specimen has been recorded in order to ensure its curative conservation and may be displayed in future as it is one of the significant specimen of the museum. In 1960 Salim Ali in his paper mentioned details about specimen of the Pink headed duck preserved in world museums where he did not mention about this specimen while mentioning other specimens preserved in India. Presently the specimen lacks the peculiar pale pink colour as it was acquired by the museum somewhere before 1879 and while referring other museum specimens of pink headed duck it was found to be faded with time. Specimen damaged from neck region, feathers removing from the hind neck region, claws also have broken so proper attention was required to provide curative conservation to the specimen from the expert of the field.

Documentation of IUCN status of the specimen: Collection comprised of many threatened and endangered species. For instance: Great Indian bustard (*Ardeotis nigriceps*), Baer's pochard (*Aythya baeri*), Siberian crane (*Grus leucogeranus*), White-rumped vulture (*Gyps bengalensis*), Indian vulture (*Gyps indicus*), Bengal florican (*Houbaropsis bengalensis*), Pink-headed duck (*Rhodonessa caryophyllacea*), Red-headed vulture (*Sarcogyps calvus*), Sociable lapwing (*Vanellus gregarius*) etc. So their IUCN status has also been documented with aim of further research on these specimens in the future as many of them having real danger of being critically endangered or extinct.

Documentation of Present Condition of the specimens: During this study one more important aspect has also been considered that is to document the present condition of the specimens which has studied and recorded to find out and to suggest how much collection need curative conservation and how much can only be preserved with preventive conservation. Condition of the specimen whether good or bad was examined, detailed

individual condition of the specimen also recorded i.e. satisfactory, fragile, badly or completely damaged, feather removing, damaged/broken/ missing neck, tail, beak, wing(s), leg(s) etc. Collection was also documented digitally in order to record the actual condition of the specimen and to avoid any sort of confusion where many similar specimens were there in the collection.



Splitting of skin



feathers removing

Abiotic and biotic factors responsible for deterioration: Many abiotic as well as biotic factors responsible for deterioration of the collection. Abiotic like dust, light, humidity, temperature etc have also studied and its control measures was suggested. Due to lack of trained staff, inadequate facilities the collection remain undisturbed or untouched for past several years which provided sound environment for the sustenance of insect pest. The foremost important thing is to recognise the pest found within the museum area particularly from the area of storage and display. Correct identification will provide us various significant clues about the pest like their feeding and breeding habit, preferable environment, life cycle etc. with the help of such information we can control them efficiently, adopt the integrated pest management and further conservation strategies can also be followed. Following pest were found in the storage area i.e. Shiny spider beetles (*Gibbium psylloides*), Adult and larvae of Varied carpet beetles (*Anthrenus verbasci*),

Silver fish (*Lepisma saccharina*), Larvae of Cloth moth (*Tinea pellionella*), furniture carpet beetles (*Anthrenus flavipes*) and black carpet beetle (*Attagenus unicolor*).

Conclusion:

With the help of present study it is able to find out the diversity of the natural heritage i.e. the avian collection preserved in State Museum Lucknow. But unfortunately not much attention was paid to its proper documentation, however proper documentation is crucially important as the worth of scientific collection largely depends upon the information preserved along with the specimens. The finding of this research work will be helpful to the future scholarly studies, researches, as well as for display with more accurate information to the visitors. As we are living in the era of extinction, many species got extinct or critically endangered during last few decades and many more have real danger of being extinct in future then this collection will be the significant source to conduct different researches to find out some important facts about these species. Findings of the research revealed many important facts about this rare collection. Taxonomic corrections have made like generic, trivial as well as specific name of specimen which has been changed with time to mention their accurate identification. The present status of the specimen in the “**IUCN Red List of Threatened Species**” also recorded. Many misplaced specimens recovered including one of the rare specimen of the **Pink headed duck**. Due to poor documentation system, lack of trained staff, inadequate facilities the collection remain undisturbed or untouched for past several years which provided sound environment for the sustenance of insect pest and allowing collection to get deteriorated. Proper documentation about the present status of the collection may draw the attention of higher authorities which will result into its conservation. Thus proper documentation has been found the foremost steps towards safeguarding of this natural heritage preserved in museum for our future generations.

References:

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