

Knowledge State of Kisangani Avifauna (DRC)

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Abstract: Kisangani (00°31'N 25°11'E; Alt. 400 m) covers 1.910 km². The primary habitat in the region is lowland rainforest. Ornithological studies in the region began with the American Museum of Natural History expedition in the early 1900s. The preliminary surveys showed an interesting wealth of iconic or endemic species (e.g. Congo Peacock, *Afropavo congensis* and Congo Sunbird, *Nectarinia congensis*). The diversity of birds highlighted in these early surveys prompted the Faculty of Science at the University of Kisangani to begin to conduct systematic faunal studies of birds. Forest reserves, islands and disturbed environments were surveyed for birds. Capture and release and opportunistic observations were the primary survey methods. The present work provides a list of species encountered during surveys conducted at 5 sites from 1976-2014. A total of 267 species were recorded. These results provide a starting point to improve the state of knowledge about birds of Kisangani. However several natural forest sites were not surveyed: Uma, Banalia, Wania Rukula, Yangambi, Osiyo. The combination of several methods, sampling techniques and studies based on feathers, genetic material may be relevant to the assessment of avian biodiversity in this region.

Key words: State, knowledge, biodiversity, kisangani.

1. Introduction

From the scientific point of view, the ornithological exploration of the Kisangani area (Figure 1) began with an expedition by the American Museum of Natural History between 1909 and 1913; much of the material was collected in this region.

Although ranked among the “impenetrable” ecosystems by the first foreign researchers who conducted scientific research in Congo, these ecosystems have not hesitated to show that its birdlife is also interesting, among others, in symbolic and/or endemic species; for example Congo Peacock (*Afropavo congensis*) and Congo Sunbird (*Cinnyris congensis*). Avifauna remained little known in dense lowland forests part of the Congolese central basin.

Since 1976, the Ecology and Animal Resources Management Laboratory (Laboratoire d'Ecologie et de Gestion des Ressources Animales) of the Science Faculty of Kisangani University began to conduct studies on the main zoological groups (mammals,

birds, invertebrates, insects, fishes, reptiles and amphibians). Bird studies have been conducted in several sites, mainly in Kisangani urban city (ecologically disturbed areas & gardens), forest reserves (Masako & Yoko) and island environments (Kungulu & Mbiye).

With an area ranging between 1,910 and 2,109 km², Kisangani (ck) (0°31'N 25°11'E; 376-450 m) is located in the northeastern part of the Congolese central basin [1]. Apart from the extensive swamp, seats craft practices of rice-fish, the water system is dominated by the Congo, Tshopo and Lindi Rivers [2]. These rivers have particular of having the islands and waterfalls in this region and the city extends on both banks of Congo River.

Five sites were been surveyed; two of these are protected areas north and south of the Congo River (Masako and Yoko, respectively). We also surveyed two large river islands.

Masako and Yoko are under the jurisdiction of Environment, Conservation of Nature, Water and Forests Ministry [3]. The protected areas are available for scientific surveys by Science of Kisangani

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Fig. 1 Localization of Kisangani region.

University conducted studies on operation and sustainable management of forest ecosystems [4].

2. Site Description

Masako Forest Reserve (mk): 00°36'N 25°13'E; 500 m; 2,105 ha; located in the large loop of Tshopo River at kilometer points fourteen (14) on the old Kisangani-Buta road.

Yoko Forest Reserve (yk): 00°17'N 25°17'E; 400 m; 6,975 ha; located on the left bank of the Congo River between kilometer points Twenty three (23) and Thirty two (32) on Kisangani-Ubundu road.

Kungulu (Kongolo) island (ik): 00°37'N 25°11'E; 395 m upstream and 390 m downstream; located northwest of the Kisangani city to 15 Km on Kisangani-Yangambi road at the merger of Lindi and Tshopo rivers in Congo River mouth. It has a length and a width respectively 4 and 0.6 km.

Mbiye Island (im): 00°28'N 25°17'E; 374 m; 2,800 ha; located in south-east of Kisangani city. Its downstream edge is at the height of 4 km on Kisangani-Ituri road and its upstream edge is at the height of 22 km on Kisangani-Lubutu road.

The habitats in the Kisangani region are originally lowland rainforest. However, urbanization and traditional human activities such as shifting cultivation on slash and burn, logging gradually transforming the departure of landscape in the region. Overall, the region has a humid tropical climate like “*Afi*” of Koppen classification [5].

Bird’s diversity known in Kisangani since 1976; their distribution according to the exploited sites; and sampling methods used are presents in this article.

3. Results and Discussion

A total of 267 species (Table 1 of Annex) have been

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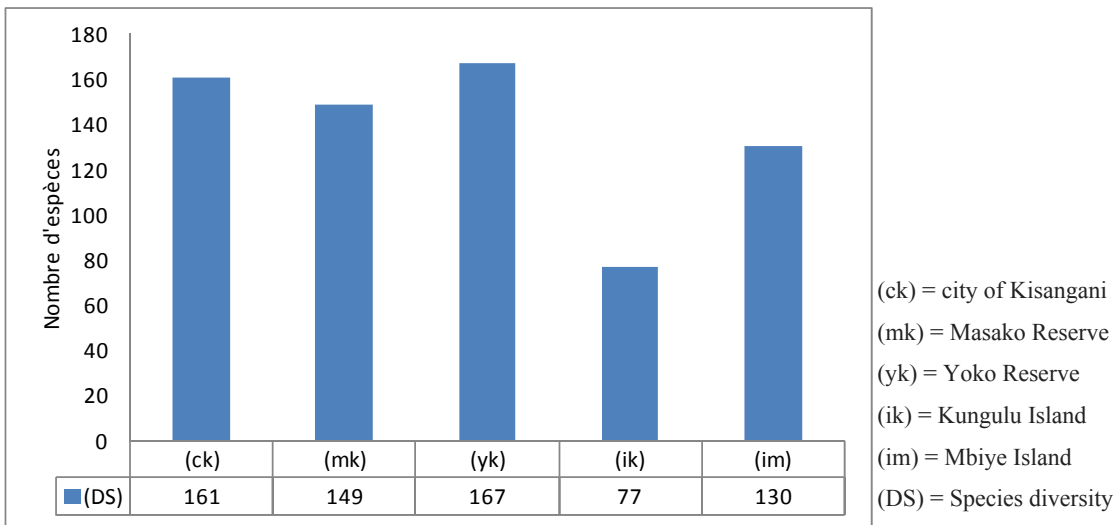


Fig. 2 Bird distribution across sites.

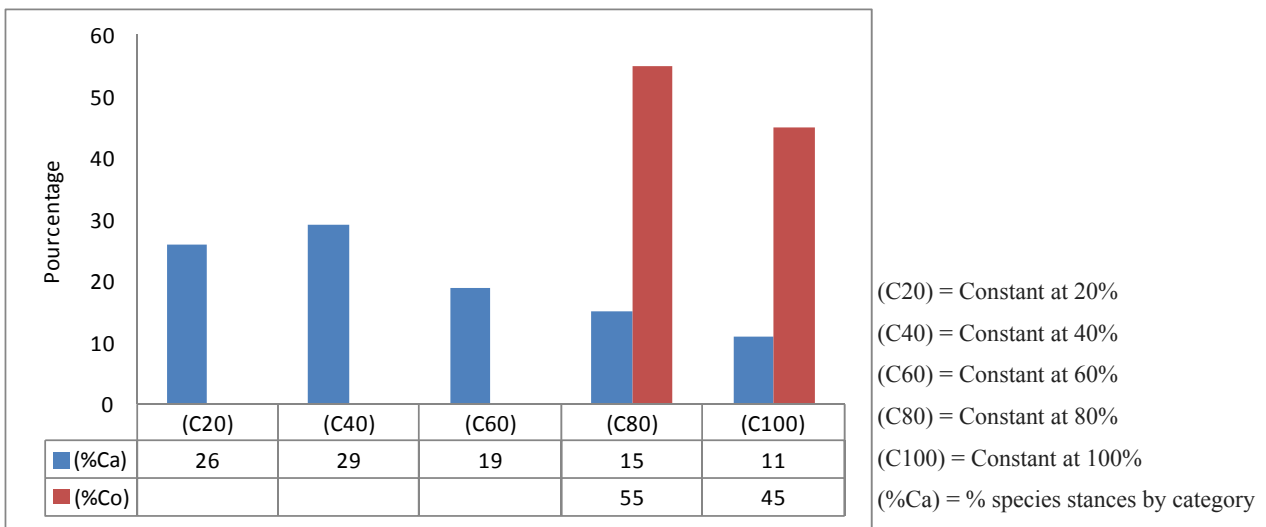


Fig. 3 Bird distribution of stances by category.

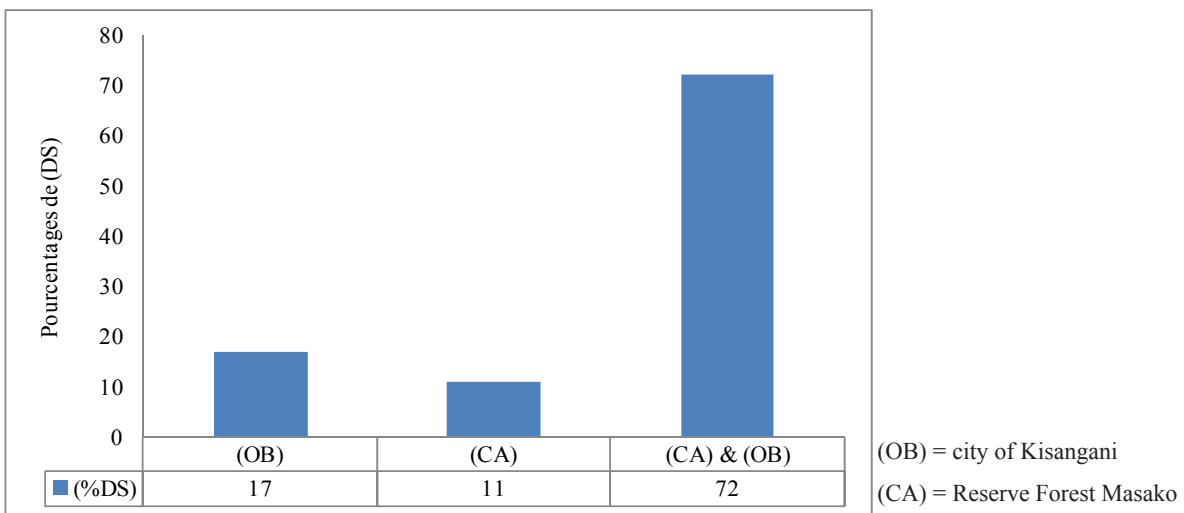


Fig. 4 Bird distribution methods Sample Rate.

recorded in Kisangani. The distribution of bird wealth and the methods used are shown by the following figures.

Avian richness achieved so far in Kisangani area puts in evidence a growing interest in studying the avifauna of this Congo Basin's part. In this region, Bashige and Dobonnet [6] estimated 300 species excluding water birds and migrants. Currently, Kisangani presented 39% of Katanga province's avifauna [7], 24% of the whole DRC [8]. This study focused on lowland rainforest and forest edge habitats. By incorporating other habitats, we are certain that we will uncover higher estimates of bird diversity in the region. Yoko (yk), urban city (ck) and masako (mk) are high species diversity sites. They are followed by Mbiye (im) and Kunguklu (ik) Islands.

Environmental disturbances (urbanization, agricultural activities in Kisangani tend to restrict forest dependent birds residents at Yoko and Masako, while Kisangani city becomes a preferential site for ruderal and migratory species [9]. The Mbiye Island has a high species bird number relative to Kungulu. The island biodiversity is closely related to the area and the environmental condition [10].

4. Conclusions

In Kisangani avian studies are still at the beginning. The first results show the value of understanding the distribution of avian diversity in this part of the Congo Basin; a region that continues to be the subject to ecological disturbance jeopardizing the future of biodiversity.

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Knowledge State of Kisangani Avifauna (DRC)

| N° | Scientific names | | |
|----|-----------------------------------|-----|-----------------------------------|
| 1 | <i>Accipiter castanius</i> | 48 | <i>Bycanistes cylindricus*</i> |
| 2 | <i>Bycanistes sharpei</i> | 49 | <i>Bycanistes subcylindricus*</i> |
| 3 | <i>Accipiter erythropus</i> | 50 | <i>Camaroptera brevicaudata</i> |
| 4 | <i>Accipiter melanoleucus</i> | 51 | <i>Camaroptera chloronata</i> |
| 5 | <i>Accipiter minullus</i> | 52 | <i>Campephaga flava</i> |
| 6 | <i>Accipiter tachiro</i> | 53 | <i>Campephaga phoenicea</i> |
| 7 | <i>Accipiter tousseneli</i> | 54 | <i>Campephaga nivosus</i> |
| 8 | <i>Acrocephalus arundinaceus</i> | 55 | <i>Caprimulgus batesi</i> |
| 9 | <i>Acrocephalus rufescens</i> | 56 | <i>Caprimulgus fossii</i> |
| 10 | <i>Acrocephalus scirpyapaenus</i> | 57 | <i>Caprimulgus inornatus</i> |
| 11 | <i>Acrocephalus shoenoaenus</i> | 58 | <i>Centropus grillii</i> |
| 12 | <i>Actophilornis africana</i> | 59 | <i>Centropus senegalensis</i> |
| 13 | <i>Alcedo cristata</i> | 60 | <i>Cerapogon atrata</i> |
| 14 | <i>Alcedo leucogaster</i> | 61 | <i>Ceryle rudis</i> |
| 15 | <i>Alcedo quadribrachys</i> | 62 | <i>Ceuthochares aereus</i> |
| 16 | <i>Alethe castanea</i> | 63 | <i>Ceyx lecontei</i> |
| 17 | <i>Alethe poliocephala</i> | 64 | <i>Ceyx pictus</i> |
| 18 | <i>Alethe poliopteryx</i> | 65 | <i>Chalcomitra rubescens</i> |
| 19 | <i>Amblyospiza albifrons</i> | 66 | <i>Charadrius hiaticula</i> |
| 20 | <i>Amaurornis flavirostra</i> | 67 | <i>Charadrius forbesi</i> |
| 21 | <i>Anhinga rufa</i> | 68 | <i>Charadrius marginatus</i> |
| 22 | <i>Anastomus lamelligeris</i> | 69 | <i>Chlorocichla flavicollis</i> |
| 23 | <i>Andropadus gracilirostris</i> | 70 | <i>Chlorocichla simplex</i> |
| 24 | <i>Andropadus gracilis</i> | 71 | <i>Chrysococcyx klaas</i> |
| 25 | <i>Andropadus latirostris</i> | 72 | <i>Chrysococcyx caprius</i> |
| 26 | <i>Andropadus virens</i> | 73 | <i>Chrysococcyx cupreus</i> |
| 27 | <i>Andropadus curvirostris</i> | 74 | <i>Cinnyris chloropygius</i> |
| 28 | <i>Anthreptes collaris</i> | 75 | <i>Cinnyris batesi</i> |
| 29 | <i>Anthreptes rectirostris</i> | 76 | <i>Cinnyris minulla</i> |
| 30 | <i>Apaloderma narina</i> | 77 | <i>Cinnyris superba</i> |
| 31 | <i>Apus apus</i> | 78 | <i>Circus acrogenus</i> |
| 32 | <i>Apus affinis</i> | 79 | <i>Cisticola anonymus</i> |
| 33 | <i>Ardea cinerea</i> | 80 | <i>Cisticola brachyptera</i> |
| 34 | <i>Ardea goliath</i> | 81 | <i>Cisticola marginatus</i> |
| 35 | <i>Ardea melanocephala</i> | 82 | <i>Clamator levaillantii</i> |
| 36 | <i>Ardea purpurea</i> | 83 | <i>Columba unicincta</i> |
| 37 | <i>Ardea sturmi</i> | 84 | <i>Coracias caudata</i> |
| 38 | <i>Ardeola ralloides</i> | 85 | <i>Corvus palvus</i> |
| 39 | <i>Baeopogon indicator</i> | 86 | <i>Corythoeca cristata*</i> |
| 40 | <i>Bias musucus</i> | 87 | <i>Criniger barbatus</i> |
| 41 | <i>Bleda exima</i> | 88 | <i>Criniger calurus</i> |
| 42 | <i>Bleda syndactylis</i> | 89 | <i>Criniger ndussumensis</i> |
| 43 | <i>Bleda ugandae</i> | 90 | <i>Cuculus canorus</i> |
| 44 | <i>Brachycope anomala</i> | 91 | <i>Cuculus clamosus</i> |
| 45 | <i>Bulbulcus ibis</i> | 92 | <i>Cuculus salitarius</i> |
| 46 | <i>Buccanodon duchailuis</i> | 93 | <i>Cyanomitra cyonoleama</i> |
| 47 | <i>Bycanistes albotibialis*</i> | 94 | <i>Cyanomitra obscura</i> |
| | | 95 | <i>Cyanomitra olivacea</i> |
| | | 96 | <i>Cypsiurus parvus</i> |
| | | 97 | <i>Deleornis aillaris</i> |
| | | 98 | <i>Delichon urbicum</i> |
| | | 99 | <i>Dendropicos fulscenscens</i> |
| | | 100 | <i>Dendropicos gabonensis</i> |
| | | 101 | <i>Dicrurus adsimilis</i> |
| | | 102 | <i>Dicrurus atripennis</i> |
| | | 103 | <i>Dicrurus coracinus</i> |
| | | 104 | <i>Dryotrochis spectabilis</i> |
| | | 105 | <i>Dyaphorophya castanea</i> |
| | | 106 | <i>Dyaphorophya tonsa</i> |
| | | 107 | <i>Egretta alba</i> |
| | | 108 | <i>Egretta garzeta</i> |
| | | 109 | <i>Elanus caeroleus</i> |
| | | 110 | <i>Estrilda melopoda</i> |
| | | 111 | <i>Estrilda nonnula</i> |
| | | 112 | <i>Euplectes afer</i> |
| | | 113 | <i>Euplectes hordeaceus</i> |
| | | 114 | <i>Eurystomus glaucurus</i> |
| | | 115 | <i>Eurystomus gularis</i> |
| | | 116 | <i>Falco biarmicus</i> |
| | | 117 | <i>Falco subbuteo</i> |
| | | 118 | <i>Falco tinnunculus</i> |
| | | 119 | <i>Gallinago gallinago</i> |
| | | 120 | <i>Gallinula angulata</i> |
| | | 121 | <i>Glareola nuchalis</i> |
| | | 122 | <i>Glaucidium sjoestedi</i> |
| | | 123 | <i>Guttera pucherani</i> |
| | | 124 | <i>Gymnopus bonapartei</i> |
| | | 125 | <i>Gymnopus sladeni</i> |
| | | 126 | <i>Gypohierax angolensis</i> |
| | | 127 | <i>Halcyon badia</i> |
| | | 128 | <i>Halcyon malimbicus</i> |
| | | 129 | <i>Halcyon senegalensis</i> |
| | | 130 | <i>Haliaeetus vocifer</i> |
| | | 131 | <i>Hirundo abyssinica</i> |
| | | 132 | <i>Hirundo angolensis</i> |
| | | 133 | <i>Hirundo nigrita</i> |
| | | 134 | <i>Hirundo rustica</i> |
| | | 135 | <i>Hirundo semirufa</i> |
| | | 136 | <i>Hirundo senegalensis</i> |
| | | 137 | <i>Hirundo smithii</i> |
| | | 138 | <i>Hylia presina</i> |
| | | 139 | <i>Illadopsis albigularis</i> |
| | | 140 | <i>Illadopsis fulvescens</i> |
| | | 141 | <i>Illadopsis puvelli</i> |

| N° | Scientific names | | |
|-----|----------------------------------|-----|-----------------------------------|
| 142 | <i>Illadopsis rufipennis</i> | 184 | <i>Neocossyphus rufus</i> |
| 143 | <i>Indicator exilis</i> | 185 | <i>Nicator chloris</i> |
| 144 | <i>Indicator maculatus</i> | 186 | <i>Nicator vireo</i> |
| 145 | <i>Indicator minor</i> | 187 | <i>Nigrita bicolor</i> |
| 146 | <i>Ispidina picta</i> | 188 | <i>Nigrita canicapillus</i> |
| 147 | <i>Isonotus guttatus</i> | 189 | <i>Nigrita fusconotus</i> |
| 148 | <i>Kaupifalco monogrammicus</i> | 190 | <i>Nigrita luteifrons</i> |
| 149 | <i>Lamprotornis splendidus</i> | 191 | <i>Oriolus brachyrhynchus</i> |
| 150 | <i>Laniarius leucorhynchus</i> | 192 | <i>Oriolus nigripennis</i> |
| 151 | <i>Laniarius splendidus</i> | 193 | <i>Oriolus oriolus</i> |
| 152 | <i>Lanius collaris</i> | 194 | <i>Pamoptila rubrifrons</i> |
| 153 | <i>Bubo poensis</i> | 195 | <i>Passer griseus</i> |
| 154 | <i>Lonchura bicolor</i> | 196 | <i>Phalacrocorax africanus</i> |
| 155 | <i>Lonchura cucullata</i> | 197 | <i>Phyllastrephus albigularis</i> |
| 156 | <i>Lonchura frugilloides</i> | 198 | <i>Phyllastrephus baumanni</i> |
| 157 | <i>Macrodipteryx longipennis</i> | 199 | <i>Phyllastrephus icterinus</i> |
| 158 | <i>Macrodipteryx vexillarius</i> | 200 | <i>Phyllastrephus xavieri</i> |
| 159 | <i>Malimbus malimbicus</i> | 201 | <i>Phylloscopus pulchella</i> |
| 160 | <i>Malimbus nictens</i> | 202 | <i>Phylloscopus trochilus</i> |
| 161 | <i>Fraseria cinerascens</i> | 203 | <i>Pirene ste oestrinus</i> |
| 162 | <i>Fraseria ocreata</i> | 204 | <i>Pitta reichenowi</i> |
| 163 | <i>Megabyas flammulatus</i> | 205 | <i>Platysterna cyanea</i> |
| 164 | <i>Megaceryle maximus</i> | 206 | <i>Platysterna laticincta</i> |
| 165 | <i>Melanomys pammelaina</i> | 207 | <i>Plectropterus gambensis</i> |
| 166 | <i>Melichneustes robustus</i> | 208 | <i>Ploceus cucullatus</i> |
| 167 | <i>Merops albicollis</i> | 209 | <i>Ploceus nigerrimus</i> |
| 168 | <i>Merops apiaster</i> | 210 | <i>Ploceus pelzeni</i> |
| 169 | <i>Merops muelleri</i> | 211 | <i>Pogoniulus atroflavus</i> |
| 170 | <i>Merops persecus</i> | 212 | <i>Pogoniulus leucolamysta</i> |
| 171 | <i>Merops superciliosus</i> | 213 | <i>Pogoniulus scolopaceus</i> |
| 172 | <i>Merops variegatus</i> | 214 | <i>Pogoniulus subsulphureus</i> |
| 173 | <i>Milvus migrans</i> | 215 | <i>Pocephalus guilelmi</i> |
| 174 | <i>Milvus milvus</i> | 216 | <i>Glareola pratincola</i> |
| 175 | <i>Motacilla aguimp</i> | 217 | <i>Poliohierax semitorquatus</i> |
| 176 | <i>Motacilla flava</i> | 218 | <i>Porphyryla alleni</i> |
| 177 | <i>Muscicapa cassini</i> | 219 | <i>Polyboroides tupus</i> |
| 178 | <i>Muscicapa comitata</i> | 220 | <i>Prinia leucopogon</i> |
| 179 | <i>Muscicapa striata</i> | 221 | <i>Prinia subflava</i> |
| 180 | <i>Muscophaga rossae</i> | 222 | <i>Psalidoprocne nictens</i> |
| 181 | <i>Nattapus auritus</i> | 223 | <i>Psalidoprocne pristoptera</i> |
| 182 | <i>Neocossyphus fraseri</i> | 224 | <i>Pseudhirundo griseopyga</i> |
| 183 | <i>Neocossyphus poensis</i> | 225 | <i>Psittacus erythacus*</i> |
| | | 226 | <i>Pteronetta hartlaubi</i> |
| | | 227 | <i>Pycnonotus balbatus</i> |
| | | 228 | <i>Quelea cardinalis</i> |
| | | 229 | <i>Quelea erythropus</i> |
| | | 230 | <i>Riparia cincta</i> |
| | | 231 | <i>Riparia paludicola</i> |
| | | 232 | <i>Riparia riparia</i> |
| | | 233 | <i>Sarkidiornis melanotos</i> |
| | | 234 | <i>Sarothrura pulchra</i> |
| | | 235 | <i>Sasia africana</i> |
| | | 236 | <i>Smithornis capensis</i> |
| | | 237 | <i>Spermophaga heamatina</i> |
| | | 238 | <i>Spermophaga polioigenus</i> |
| | | 239 | <i>Stipholmis erythrothorax</i> |
| | | 240 | <i>Stipholmis sangensis</i> |
| | | 241 | <i>Stipholmis xanthogaster</i> |
| | | 242 | <i>Stizorhina fraseri</i> |
| | | 243 | <i>Stocopelia peli</i> |
| | | 244 | <i>Streptopelia semitorquata</i> |
| | | 245 | <i>Strix woodfordii</i> |
| | | 246 | <i>Thalassomys leuconotus</i> |
| | | 247 | <i>Terpsiphone batesi</i> |
| | | 248 | <i>Terpsiphone rufiventris</i> |
| | | 249 | <i>Terpsiphone ruficincta</i> |
| | | 250 | <i>Terpsiphone viridis</i> |
| | | 251 | <i>Tockus fasciatus*</i> |
| | | 252 | <i>Treron australis*</i> |
| | | 253 | <i>Treron calva</i> |
| | | 254 | <i>Tringa glareola</i> |
| | | 255 | <i>Tringa nebularia</i> |
| | | 256 | <i>Tringa ochropus</i> |
| | | 257 | <i>Tringa stagnatilis</i> |
| | | 258 | <i>Tringa pugnax</i> |
| | | 259 | <i>Tringa hypoleucos</i> |
| | | 260 | <i>Trochocercus nitens</i> |
| | | 261 | <i>Tropicranus albocristatus</i> |
| | | 262 | <i>Turdus olivaceus</i> |
| | | 263 | <i>Turdus pelios</i> |
| | | 264 | <i>Turtur afer</i> |
| | | 265 | <i>Turtur brehmeri</i> |
| | | 266 | <i>Turtur tympanistris</i> |
| | | 267 | <i>Vidua macroura</i> |