

## **Supplementary Material to “Museum collections indicate bird defaunation in a biodiversity hotspot”**

### *Appendix I. Historical survey*

Hellmayr (1906) critically revised the birds collected and described by Spix & Martius (1840). Unfortunately, Spix and Martius (1840) provided few details on precise localities of collections, including 13 species from “São Paulo”, three of which Natterer failed to collect, including *Gubernetes yetapa* (Vieillot 1818), *Knipolegus lophotes* Boie 1828 and *Xolmis velatus* (Lichtenstein 1823). Therefore, we did not include them here. Pelzeln (1868) organized and published Natterer’s 18-year Brazilian specimens, who collected the remarkable number (even for today’s standards) of 340 species at Ipanema. Some of Langsdorff’s collections were catalogued, although with no intended identification (Berthels et al. 1979). No author has treated Langsdorff’s historical records for Ipanema (or any other locality) in a single study. Instead, the material of the members of his expedition has been cited in a fragmented way (J. F. Pacheco in litt. 2011), especially those that were not sent to Russia, which were thence deposited in several European museums (e.g. Brandt 1835, Ménétrières 1835). No author has done this compilation, except for his mammalian collection (Abramov & Baranova 2008). Several dozens of Langsdorff’s Brazilian stuffed birds remain housed at the Zoological Museum of the Moscow State University. However, almost all specimens lack information on tags, including dates or localities; typically, "Brazil" is the only inscription (P. S. Tomkovich in litt. 2011), making these specimens of limited value for our purpose.

Sellow died before he could publish his collecting efforts and A. Lichtenstein assumed the responsibility of relabeling most specimens. His work was unsatisfactory, and much information was lost or wrongly replaced among specimens (Rego et al. 2013). Therefore, Sellow’s contributions to the Brazilian ornithology are now quite unreliable and we did not include his two species (*Cercomacra brasiliana* Hellmayr 1905 and *Calyptura cristata* (Vieillot

1818) from “Ypanema, Estado de Sao Paulo, Brasilien, South America”, deposited at the Museum für Naturkunde, Berlin (Stopiglia et al. 2009, Rego et al. 2013). Krabbe (2007) reviewed Lund and Reinhardt’s short stay in Ipanema. Although they collected 932 specimens in the states of Rio de Janeiro and São Paulo, he listed only seven species from that locality. Finally, despite considering that Mikan (1820) spent some days on this iron foundry, we failed to find Ipanema bird records within his manuscript.

Natterer alone accumulated 556 days at Ipanema, whereas other naturalists spent at least 76 days there. This totals 632 days or roughly one year and nine months of collecting. Because of this painstaking work, Ipanema is also known as the type locality of several bird taxa, such as *Streptoprocne biscutata* (Sclater 1866), *Accipiter poliogaster* (Temminck 1824), *Dryophila malura* (Temminck 1825), *Phylloscartes eximius* (Temminck 1822), including some Brazilian endemic species: *Dryophila ochropyga* (Hellmayr 1906) and *Myrmoderus squamosus* (Pelzeln 1868). Historical records summed up the impressive number of 340 (no other naturalist collected different species than Natterer) species of 22 orders and 60 families.