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BIRD (AVES) DESCRIPTIONS OF JOANNES ANTONIUS SCOPOLI (1723-1788): GENERAL OVERVIEW

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ABSTRACT

*Author of at least 175 new bird taxa, of which 59 taxa are still valid today, Joannes Antonius Scopoli (1723-1788) is one of the most important creators of ornithological history worldwide, yet often overlooked because his ornithological legacy remains poorly researched and known. His most important scientific work was conducted in Carniola (present-day Slovenia) between 1754 and 1769 and resulted in numerous publications. These include bird studies published in *Annus I. Historico Naturalis*, *Descriptiones Avium* (1769), while later studies were devoted to the revision of other explorer datasets, the most important being descriptions of birds from Pierre Sonnerat's expeditions. The paper presents an overview of the all new bird taxa described by Scopoli.*

Key words: history of science, ornithology, collection, taxonomy, type specimens, zoological nomenclature

DESCRIZIONI DEGLI UCCELLI (AVES) DI GIOVANNI ANTONIO SCOPOLI (1723-1788): PANORAMICA GENERALE

SINTESI

*Autore di almeno 175 nuovi taxa di uccelli, di cui 59 taxa ancora validi oggi, Giovanni Antonio Scopoli (1723-1788) è uno dei più importanti creatori di storia ornitologica a livello mondiale, ma spesso trascurato perché la sua eredità ornitologica rimane poco studiata e conosciuta. Il suo lavoro scientifico più importante fu condotto in Carniola (l'attuale Slovenia) tra il 1754 e il 1769, e portò a numerose pubblicazioni. Queste includono studi sugli uccelli pubblicati in *Annus I. Historico Naturalis*, *Descriptiones Avium* (1769), mentre gli studi successivi furono dedicati alla revisione di altri set di dati di esploratori, le più importanti furono le descrizioni degli uccelli delle spedizioni di Pierre Sonnerat. L'articolo presenta una panoramica di tutti i nuovi taxa di uccelli descritti da Scopoli.*

Parole chiave: storia della scienza, ornitologia, collezione, tassonomia, esemplari tipo, nomenclatura zoologica

INTRODUCTION

Although Joannes Antonius Scopoli (1723-1788; Fig. 1) was one of the first adherents of modern Linnean classification of organisms and pioneered the study of biodiversity, including birds, in the previously unexplored part of SE Europe, little is known about his work related to ornithology. In fact, Scopoli is not mentioned at all (Bezzel & Prinzinger, 1990, Mearns & Mearns, 1998, Birkhead, 2008, Chansigaud, 2009) or only very briefly (Walters, 2003; Gebhardt, 2006) in many compilations on the history of ornithology, although he was one of the first descriptors of birds in Europe after Carl Linnaeus (1707-1778) and also one of his correspondents (Soban, 2004). In the letters, Scopoli and Linnaeus discussed taxonomic issues concerning various bird species, including the Wallcreeper (*Tichodroma muraria*), which was later described by Linnaeus (1766) according to Scopoli's description (Barbagli *et al.*, 1997). Scopoli's main works were based on original field observations made by Scopoli himself or by his correspondents such as Franz Xaver Wulfen (1728-1805), Count Josef Brigido von Bresowitz (1733-1817), Balthasar Hacquet (1739-1815), and others (Petkovšek, 1977), mainly in the territory of Carniola (Slovenia), Carinthia (Austria), and Friuli (Italy). Scopoli's fundamental works concern plants (Scopoli, 1760, 1772), insects and other arthropods (Scopoli, 1763), and birds (Scopoli, 1769). His most important field studies took place between the years 1754 and 1769, when he was appointed by imperial decree as a physician to Idria (W Slovenia), but from there he conducted several expeditions to different parts of Carniola, nowadays mostly W Slovenia (Petkovšek, 1977; Vrezec *et al.*, 2017; Vrezec, 2023). After leaving Idria and Carniola in 1769, he devoted more time to professorship and cabinet study of written sources or material brought to him by correspondents, and to building his collection.

The first and most important ornithological work by J.A. Scopoli was *Annus I. Historico Naturalis, Descriptiones avium*, published in 1769, in which Scopoli described 254 bird taxa. The descriptions were based on Scopoli's personal examination of bird specimens in the field (and in his own collection), in the bird collection of Count Francesco Annibale Della Torre (germ. Franz Hannibal von Thurn), and the examination of live bird specimens at the imperial ZOO Schönbrunn in Vienna. The ZOO specimens came mainly from the expedition of the Viennese chemistry and botany professor Nikolaus Joseph von Jacquin (1727-1817), who undertook an expedition to South America (West Indies, Venezuela, Carthagen) between 1754-1759 (Fitzinger, 1853). Bird specimens, which were brought alive to Vienna, were collected mainly by Giovanni Buonamici and

Fernando Barculi, who joined Jacquin's expedition (Fitzinger, 1856). Scopoli (1769) was the first to scientifically describe bird species from Jacquin's South American expedition, while illustrations of the birds with additional descriptions were later provided by Jacquin's son Joseph Franz von Jacquin (1766-1839) in *Beiträge zur Geschichte der Vögel* (Jacquin, 1784). Scopoli's (1769) *Descriptiones avium* was written in Latin, but it was so important that it was translated into German by Friderich Christian Günther the very next year after its publication (Scopoli, 1770). Günther's German translation was in fact the first revision of Scopoli (1769), as Günther attempted to combine Scopoli's Latin names with existing German bird names. Günther believed, as he explained in the preface, that it was important for Germans (Austria, including Carniola, was then part of the German Holy Roman Empire) to read about their nature in their own native language. However, this revision was not checked or approved by Scopoli himself, as Günther stated in the preface, although Scopoli mentions F.C. Günther among his collaborators in his autobiography *Vitae Meae Vices*, published in *Deliciae Flora et Fauna Insubrica* (Scopoli 1788). Following Günther's interpretations, which did not aim to taxonomically revise Scopoli's bird names, there were several taxonomic revisions of Scopoli (1769) de-



Fig./Sl. 1: Joannes Antonius Scopoli (1723-1733).

scriptions in 19th century, which were summarized by Hartert (1903, 1905, 1912, 1913, 1920a, 1920b, 1921a, 1921b). However, Hartert (1903, 1905, 1913, 1920a, 1921b) wrongly interpreted type localities from Carniola, what was criticized and corrected by Scheibel (1919), although these corrections were not fully adopted in later taxonomic revisions and overviews (e.g. Vaurie 1959, 1965; Mayr & Paynter 1964; del Hoyo *et al.*, 2005). Recently, Gregori (2008) presented an overall revision and interpretation of all descriptions in Scopoli (1769), with some taxa being still unresolved.

However, *Descriptiones avium* (Scopoli, 1769) was not Scopoli's only ornithological publication. In 1777, Scopoli published another work that included birds, *Introductio ad historiam naturalem sistens genera lapidum, plantarum et animalum* (Scopoli, 1777). This publication, however, was intended as a high-level taxonomic contribution dealing with the classification of minerals, plants, and animals based on Linnean systematics, classifying and describing genera rather than species. Scopoli (1777) also introduced some new genus names for birds in this work. Other ornithological publications, while not as comprehensive, were nevertheless important to modern ornithology and were first summarized by Newton (1882). Scopoli described birds in several treatises published in three volumes of his last work, *Deliciae Flora et Fauna Insubricae* (Scopoli 1786a, 1786b, 1788). In Part I (Scopoli 1786a) he revised the species described under the generic name *Alauda* (*De Alaudis Nostratibus*), including seven species. Part II (Scopoli 1786b) described the species *Falco rufus* (synonym of the Red-footed Falcon *Falco tinnunculus* Linnaeus 1766), for which he also provided the illustration, and the Linnean nomenclatural revision of the mammal and bird descriptions of the French naturalist Pierre Sonnerat (1748-1814). Sonnerat published his extensive observations from expeditions in Southeast Asia and Africa, including fauna (Sonnerat, 1776, 1782), which he did not describe according to new Linnean principles of naming. In Part III (Scopoli, 1788) there is only a description of *Fringilla alpina*, synonym of the Citril Finch *Carduelis citrinella* (Pallas, 1764), with an illustration. Although Scopoli made and published many illustrations especially of plants and insects, he provided only two original and above-mentioned illustrations of birds.

In the paper an overview of Scopoli's ornithological work is given with a review of the new bird taxa described by Scopoli. Since Scopoli's legacy is still unresolved with respect to the taxa he described, all existing bird figures used by J.A. Scopoli for his new bird taxa are presented, including tracking of bird collections with Scopoli's type specimens with comments on their current status. Published on the

occasion of the 300th anniversary of J.A. Scopoli's birth, this work is intended to serve as an overview of current status of Scopoli's bird names and descriptions as a baseline for further historical studies of Scopoli's ornithological work, and for conducting further taxonomic and faunistic studies of birds in a period when accurate scientific data on avifauna were rare. This review is therefore not aiming in taxonomic revision of Scopoli's descriptions, but to highlight main taxonomic challenges connected to Scopoli's bird taxa.

MATERIAL AND METHODS

For determining new bird taxa described by Scopoli all four ornithological works were taken into consideration (Scopoli, 1769, 1786a, 1786b, 1788). Scopoli (1777) was not considered as it deals only with descriptions of taxa at genus level. Each described taxon was checked whether Scopoli listed already known taxon published in previous works of other authors that described species following Linnaean nomenclature system. Scopoli usually cited reference works, but in some cases I considered already published taxon also if Scopoli used the same name for the same species that was used already in preceding publications, but without exact citation given by Scopoli. For defined new Scopoli's taxa I have collected type localities stated by Scopoli in his descriptions. Following previous studies the localities cited in Scopoli (1769) were considered reliable (Hartert, 1903, 1905, 1913, 1920a, 1921b; Scheibel, 1919), while taxa published in other works less so. In particular Scopoli (1786b) descriptions of birds from Sonnerat (1776, 1782) the referred localities are known to be frequently wrong and misleading, partly because of inaccurate redescrptions of Sonnerat's localities in Scopoli's interpretations (Newton, 1882), but mostly because Sonnerat himself was giving wrong localities in his bird descriptions (Stresemann, 1952; Clancey, 1959; Mees, 1972). Therefore, beside original localities cited by Scopoli, possible interpretations of type localities at country level have been given following taxonomic review literature (only for currently valid bird taxa) or my own interpretations of them (interpretations of localities from Scopoli (1769)). For each described taxon the collections containing types given by Scopoli or interpreted from his descriptions is given as a baseline for further museological research of possible surviving Scopoli's type specimens. From the available literature and online sources also existing or newly designated types of Scopoli's taxa were extracted, but these data might be still incomplete since type specimens holdings from all museums

are still not published or available. From Scopoli's descriptions citations of figures of described taxa were collected and presented as a key reference material for further historical taxonomic interpretations. For each taxon published interpretations of (sub)species identity were collected, but not all Scopoli's taxa were interpreted and analysed yet. Some additional identity suggestions are given based on cited reference figures, which were compared with global avifaunal overview (del Hoyo, 2020). According to collected identifications the current taxonomic status of Scopoli's new bird descriptions was derived.

RESULTS AND DISCUSSION

New bird taxa described by Joannes A. Scopoli

As new species J.A. Scopoli described 175 bird taxa (Appendix 1). In Scopoli (1769) mainly birds from Carniola (nowadays Western Slovenia) were described with some specimens from Friuli and south Tyrol (NE Italy), Carinthia (South Austria), and non-European species mainly from South America. In all descriptions Scopoli referred to specimens from three collections he examined himself. Specimens were most likely examined also in Scopoli (1786a, 1788), although collections were not specified. On the other hand, Scopoli (1786b) exotic bird taxa mainly rely on figures and text from Sonnerat (1776, 1782), and not by examining the specimens. Therefore, figures from Sonnerat (1776, 1782) can be regarded as figures of types. According to the currently valid bird taxonomy (Gill *et al.*, 2023), J.A. Scopoli authors 59 valid bird taxa (34 % of all of his described new taxa), 52 species and 7 subspecies, and in addition 3 genera. The genus name *Apus* was established after Belon (1555) (Scopoli, 1777), while the genera *Sylvia* and *Branta* were first proposed in Scopoli (1769). Furthermore, I have found that at least 11 Scopoli's bird taxa (6 %) are senior synonyms and were apparently overlooked in past taxonomic revisions, although at least some are already known (e.g. Oberholser, 1918), among them 6 taxa at species and 5 at subspecies level. There are additional 38 taxa (22 %) being still unresolved according to the current revisions and are in need of further examination taking into account all Scopoli's references, text and figure references, as well as other historical backgrounds to restore Scopoli's taxonomic heritage. Altogether I have tracked only three types of Scopoli's bird taxa preserved in museum collections, all of them in Muséum National d'Histoire Naturelle in Paris, which originated from the Sonnerat's collection (Voisin *et al.*, 2004; Voisin

& Voisin, 2008, 2010). Additionally, the neotype of *Halcyon albiventris* (Scopoli, 1786), a female specimen from Mount Edgecombe near Durban (South Africa), was designated and stored in the Natal Museum collection in South Africa (Clancey, 1959) with no further information available.

Bird descriptions in Scopoli (1769) followed the taxonomic standards, which includes name proposal, overview of current knowledge by citing key references including figures, detailed morphological diagnosis, reference collection (types were not designated at that time), and additional descriptive notes about species morphology and life history. Some species were supplemented with vernacular names in Carniolian (Slovenian), Italian and German languages. Unfortunately, according to current knowledge Scopoli did not prepare any illustrations of his bird specimens published in Scopoli (1769), although they might exist as separate illustrations as recently found illustrations of Scopoli's fungi and lichens by Thomas Hörmann in museums in Paris and Vienna (Piltaver, 2023). I identified 70 bird taxa as new descriptions in Scopoli (1769) and 56 of them are considered resolved and among them 13 taxa are today valid species or subspecies. However, there are 6 taxa which can be considered as senior synonyms, and some were resolved only recently (Gregori, 2008). For example, the Capercaillie male was described by Scopoli following Linnaeus (1758) description of *Tetrao urogallus*, but female was described separately as *Tetrao nemesianus* referring also to the figure from Aldrovandi (1637) (Fig. 8) as revealed by Gregori (2008). Both, Aldrovandi figure and Scopoli's specimen from Della Torre collection originated from southern Capercaillie population that belongs to the subspecies *Tetrao urogallus major* Brehm, 1831 (Madge & McGowan, 2002). The subspecies was recently renamed to *Tetrao urogallus crassirostris* Brehm, 1831 since *Tetrao major* Brehm, 1831 was preoccupied by *Tetrao major* Gmelin, 1789, the name for the other species (Trust for Avian Systematics, 2021). Older Scopoli's name was apparently overlooked since the name *Tetrao urogallus nemesianus* Scopoli, 1769 would be correct following the Principle of Priority (International Commission on Zoological Nomenclature, 1999). New taxa described in Scopoli (1769) should be explored more with designation of neotypes to stabilize names and type localities as already pointed out by Scheibel (1919).

In describing birds according to Sonnerat (1776, 1782) or even in transcribing Sonnerat's descriptions according to the principles of Linnean nomenclature (Newton, 1882), Scopoli did not see any of Sonnerat's specimens preserved in Paris (Berlioz, 1950). However, in 1785 Scopoli became a member of Agricultural

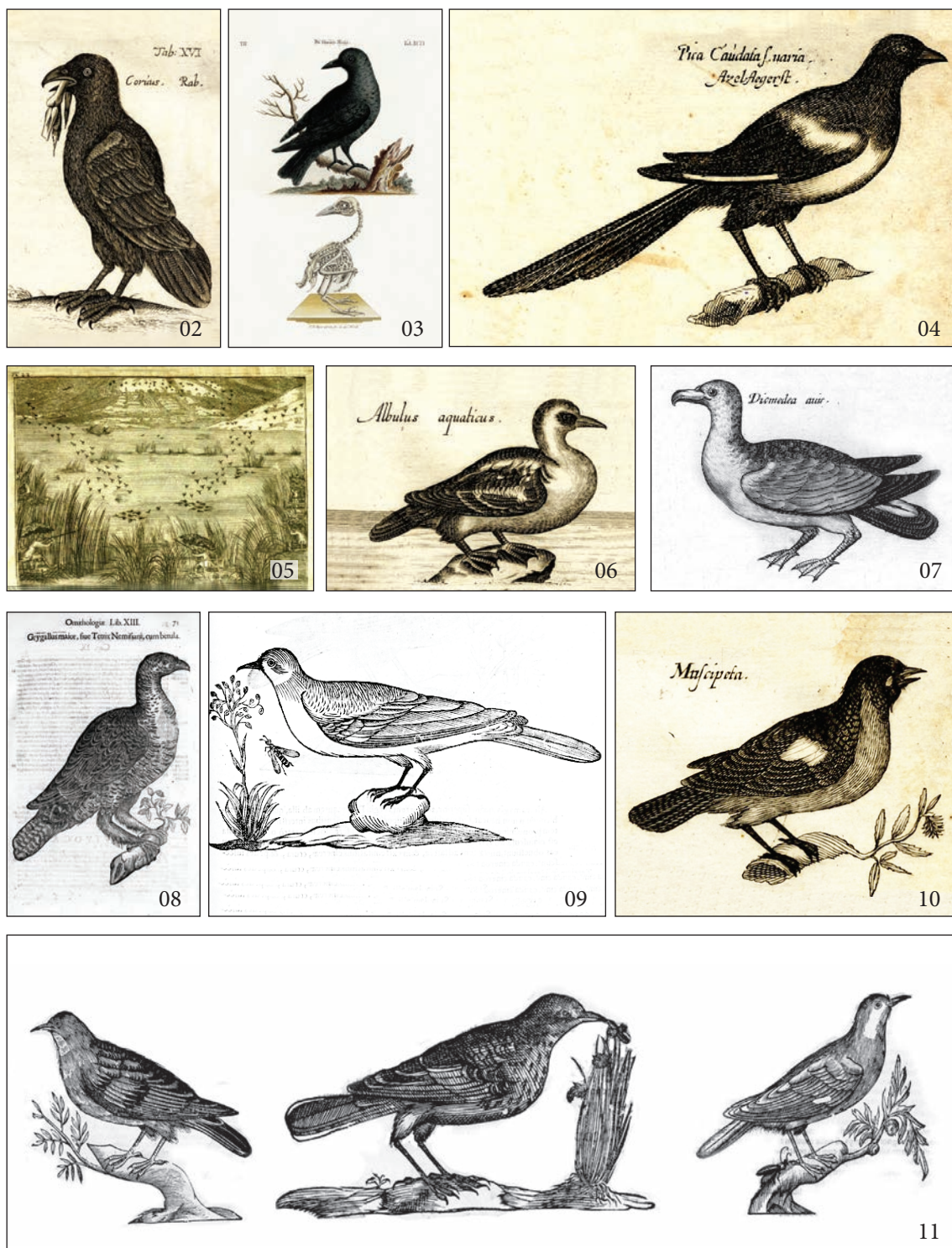


Fig./Sl. 2: *Corvus maximus* Scopoli, 1769, Jonston (1650), Tab. 16 (Corvus). **Fig./Sl. 3:** *Corvus vulgaris* Scopoli, 1769, Meyer (1752), Tab. 99. **Fig./Sl. 4:** *Corvus rusticus* Scopoli, 1769, Jonston (1650), Tab. 17 (Pica). **Fig./Sl. 5:** *Anas subterranea* Scopoli, 1769, Steinberg (1758), Tab. 22. **Fig./Sl. 6:** *Mergus albus* Scopoli, 1769, Jonston (1650), Tab. 47 (*Albulus aquaticus*). **Fig./Sl. 7:** *Procellaria diomedea* Scopoli, 1769, Jonston (1650), Tab. 46 (*Diomedea avis*). **Fig./Sl. 8:** *Tetrao nemesianus* Scopoli, 1769, Aldrovandi (1637), Lib. 13, Cap. 18. **Fig./Sl. 9:** *Motacilla boarula* Scopoli, 1769, Aldrovandi (1637), Lib. 17, Cap. 25. **Fig./Sl. 10:** *Sylvia muscipeta* Scopoli, 1769, Jonston (1650), Tab. 45 (*Muscipeta*). **Fig./Sl. 11:** *Alauda turdina* Scopoli, 1786, Aldrovandi (1637), Lib. 17, Cap. 26.



Fig./Sl. 12: *Falco rufus* Scopoli, 1786, Scopoli (1786), Tab. 19. **Fig./Sl. 13:** *Vultur radiatus* Scopoli, 1786, Sonnerat (1782), Pl. 103. **Fig./Sl. 14:** *Vultur calvus* Scopoli, 1786, Sonnerat (1782), Pl. 104. **Fig./Sl. 15:** *Vultur indicus* Scopoli, 1786, Sonnerat (1782), Pl. 105. **Fig./Sl. 16:** *Lanius phillippinus* Scopoli, 1786, Sonnerat (1776), Pl. 25. **Fig./Sl. 17:** *Lanius nasutus* Scopoli, 1786, Sonnerat (1776), Pl. 70. **Fig./Sl. 18:** *Lanius ruber* Scopoli, 1786, Sonnerat (1776), Pl. 71. **Fig./Sl. 19:** *Lanius albus* Scopoli, 1786, Sonnerat (1776), Pl. 72. **Fig./Sl. 20:** *Lanius rufus* Scopoli, 1786, Sonnerat (1782), Pl. 106. **Fig./Sl. 21:** *Lanius chinensis* Scopoli, 1786, Sonnerat (1782), Pl. 107. **Fig./Sl. 22:** *Psittacus papou* Scopoli, 1786, Sonnerat (1776), Pl. 111. **Fig./Sl. 23:** *Psittacus signatus* Scopoli, 1786, Sonnerat (1776), Pl. 42. **Fig./Sl. 24:** *Psittacus quianensis* Scopoli, 1786, Sonnerat (1776), Pl. 43. **Fig./Sl. 25:** *Psittacus pileatus* Scopoli, 1786, Sonnerat (1776), Pl. 44. **Fig./Sl. 26:** *Psittacus cingulatus* Scopoli, 1786, Sonnerat (1776), Pl. 41. **Fig./Sl. 27:** *Psittacus melanopterus* Scopoli, 1786, Sonnerat (1776), Pl. 40

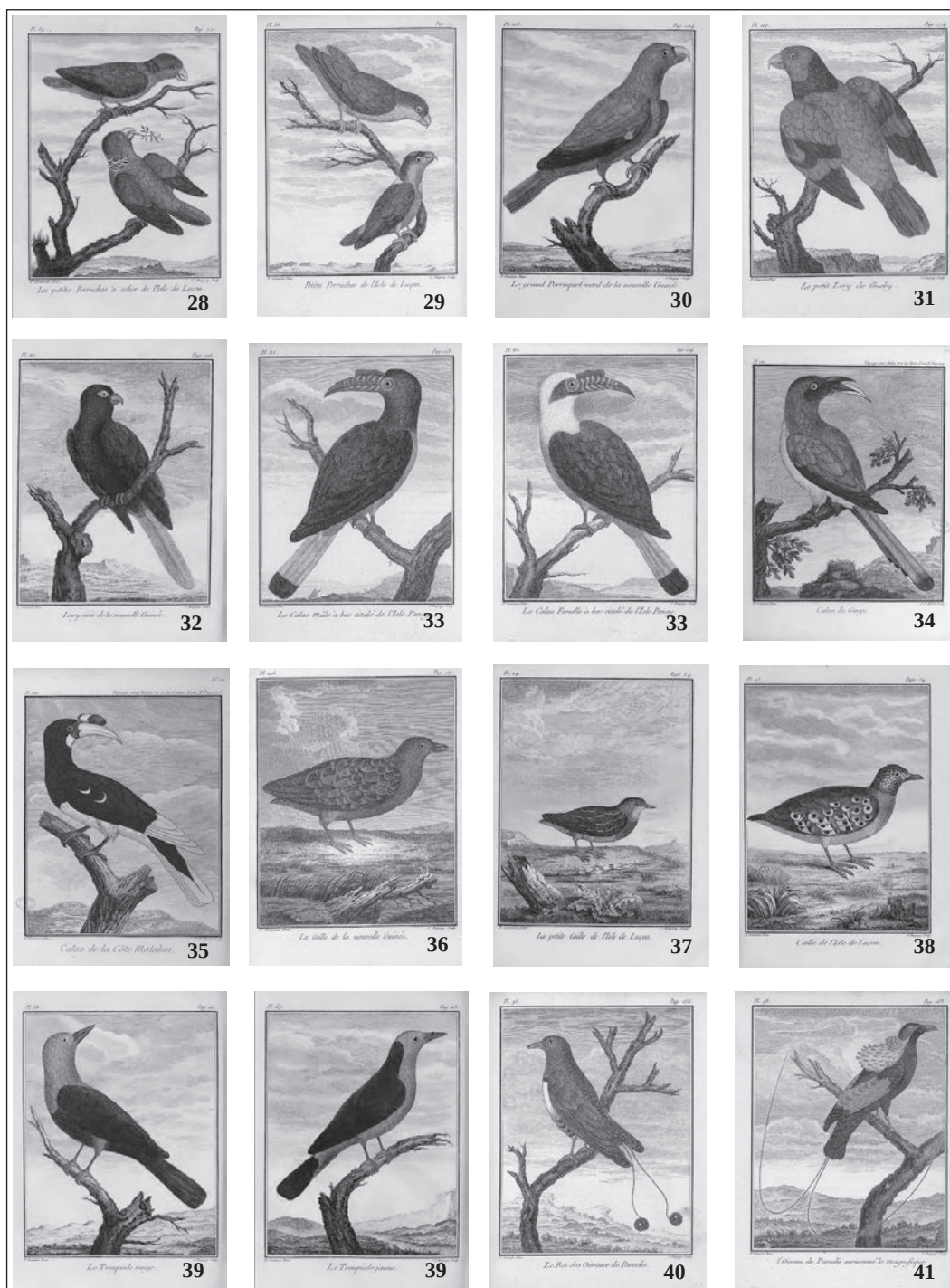


Fig./Sl. 28: *Psittacus lunulatus* Scopoli, 1786, Sonnerat (1776), Pl. 39. **Fig./Sl. 29:** *Psittacus leucophthalmos* Scopoli, 1786 (upper/zgoraj), *Psittacus pumilus* Scopoli, 1786 (lower/spodaj), Sonnerat (1776), Pl. 38. **Fig./Sl. 30:** *Psittacus polychloros* Scopoli, 1786, Sonnerat (1776), Pl. 30. **Fig./Sl. 31:** *Psittacus guenbyensis* Scopoli, 1786, Sonnerat (1776), Pl. 109. **Fig./Sl. 32:** *Psittacus ater* Scopoli, 1786, Sonnerat (1776), Pl. 110. **Figs./Sl. 33:** *Buceros panayensis* Scopoli, 1786, Sonnerat (1776), Pl. 82, 83. **Fig./Sl. 34:** *Buceros birostris* Scopoli, 1786, Sonnerat (1782), Pl. 121. **Fig./Sl. 35:** *Buceros pica* Scopoli, 1786, Sonnerat (1782), Pl. 121 (second Pl. 121). **Fig./Sl. 36:** *Oriolus cothurnix* Scopoli, 1786, Sonnerat (1776), Pl. 105. **Fig./Sl. 37:** *Oriolus lineatus* Scopoli, 1786, Sonnerat (1776), Pl. 24. **Fig./Sl. 38:** *Oriolus ocellatus* Scopoli, 1786, Sonnerat (1776), Pl. 33. **Figs./Sl. 39:** *Xanthornus holosericeus* Scopoli, 1786, Sonnerat (1776), Pl. 68, 69. **Fig./Sl. 40:** *Paradisea rex* Scopoli, 1786, Sonnerat (1776), Pl. 95. **Fig./Sl. 41:** *Paradisea penicillata* Scopoli, 1786, Sonnerat (1776), Pl. 97.



Fig./Sl. 42: *Paradisea viridis* Scopoli, 1786, Sonnerat (1776), Pl. 99. **Fig./Sl. 43:** *Gracula caerulea* Scopoli, 1786, Sonnerat (1782), Pl. 108. **Fig./Sl. 44:** *Gracula cristata* Scopoli, 1786, Sonnerat (1782), Pl. 109. **Fig./Sl. 45:** *Trogon luzonensis* Scopoli, 1786, Sonnerat (1776), Pl. 34. **Fig./Sl. 46:** *Cuculus variegatus* Scopoli, 1786, Sonnerat (1776), Pl. 78. **Fig./Sl. 47:** *Cuculus flaviventris* Scopoli, 1786, Sonnerat (1776), Pl. 79. **Fig./Sl. 48:** *Cuculus viridis* Scopoli, 1786, Sonnerat (1776), Pl. 80. **Fig./Sl. 49:** *Cuculus merulinus* Scopoli, 1786, Sonnerat (1776), Pl. 81. **Fig./Sl. 50:** *Picus guineensis* Scopoli, 1786, Sonnerat (1776), Pl. 35. **Fig./Sl. 51:** *Picus menstruus* Scopoli, 1786, Sonnerat (1776), Pl. 36. **Fig./Sl. 52:** *Picus lucidus* Scopoli, 1786, Sonnerat (1776), Pl. 37. **Fig./Sl. 53:** *Picus maculatus* Scopoli, 1786, Sonnerat (1776), Pl. 77. **Fig./Sl. 54:** *Alcedo coromandeliana* Scopoli, 1786, Sonnerat (1782), Pl. 118. **Fig./Sl. 55:** *Alcedo albiventris* Scopoli, 1786, Sonnerat (1776), Pl. 31. **Fig./Sl. 56:** *Alcedo collaris* Scopoli, 1786, Sonnerat (1776), Pl. 33. **Fig./Sl. 57:** *Alcedo undulata* Scopoli, 1786, Sonnerat (1776), Pl. 106.



Fig./Sl. 58: *Alcedo variegata* Scopoli, 1786, Sonnerat (1776), Pl. 107. **Fig./Sl. 59:** *Merops bruneus* Scopoli, 1786, Sonnerat (1776), Pl. 100. **Fig./Sl. 60:** *Merops maximus* Scopoli, 1786, Sonnerat (1776), Pl. 101. **Fig./Sl. 61:** *Certhia canora* Scopoli, 1786 (1), *Certhia malacensis* Scopoli, 1786 (2), Sonnerat (1782), Pl. 116. **Fig./Sl. 62:** *Certhia coccinea* Scopoli, 1786 (1), *Certhia trigonostigma* Scopoli, 1786 (2), *Certhia grisea* Scopoli, 1786 (3), Sonnerat (1782), Pl. 117. **Fig./Sl. 63:** *Certhia lutea* Scopoli, 1786, Sonnerat (1782), Pl. 119. **Fig./Sl. 64:** *Certhia quadricolor* Scopoli, 1786, Sonnerat (1776), Pl. 30-A, B. **Fig./Sl. 65:** *Apterodita longirostris* Scopoli, 1786, Sonnerat (1776), Pl. 113. **Fig./Sl. 66:** *Apterodita longirostris* Scopoli, 1786, Pennant (1781), Pl. 14. **Fig./Sl. 67:** *Apterodita platyrhynchos* Scopoli, 1786, Sonnerat (1776), Pl. 114. **Fig./Sl. 68:** *Sterna anaethetus* Scopoli, 1786, Sonnerat (1776), Pl. 84. **Fig./Sl. 69:** *Sterna pileata* Scopoli, 1786, Sonnerat (1776), Pl. 85. **Fig./Sl. 70:** *Sterna multicolor* Scopoli, 1786, Sonnerat (1776), Pl. 55. **Fig./Sl. 71:** *Platalea alba* Scopoli, 1786, Sonnerat (1776), Pl. 51. **Fig./Sl. 72:** *Platalea cristata* Scopoli, 1786, Sonnerat (1776), Pl. 52. **Fig./Sl. 73:** *Tantalus rufus* Scopoli, 1786, Sonnerat (1776), Pl. 47.



Fig./Sl. 74: *Tantalus variegatus* Scopoli, 1786, Sonnerat (1776), Pl. 48. **Fig./Sl. 75:** *Tringa fasciata* Scopoli, 1786, Sonnerat (1782), Pl. 96. **Fig./Sl. 76:** *Tringa chirurgus* Scopoli, 1786, Sonnerat (1776), Pl. 45. **Fig./Sl. 77:** *Charadrius dubius* Scopoli, 1786, Sonnerat (1776), Pl. 46. **Fig./Sl. 78:** *Charadrius cristatus* Scopoli, 1786, Sonnerat (1776), Pl. 49. **Fig./Sl. 79:** *Otis secretarius* Scopoli, 1786, Sonnerat (1776), Pl. 79. **Fig./Sl. 80:** *Pavo malacensis* Scopoli, 1786, Sonnerat (1782), Pl. 99. **Fig./Sl. 81:** *Pavo malacensis* Scopoli, 1786, Edwards (1747), Tab. 67. **Fig./Sl. 82:** *Phasianus rouloul* Scopoli, 1786, Sonnerat (1782), Pl. 100. **Fig./Sl. 83:** *Tetrao pintadeanus* Scopoli, 1786, Sonnerat (1782), Pl. 97. **Fig./Sl. 84:** *Tetrao madagarensis* Scopoli, 1786, Sonnerat (1782), Pl. 98. **Fig./Sl. 85:** *Columba nitidissima* Scopoli, 1786, Sonnerat (1782), Pl. 101. **Fig./Sl. 86:** *Columba chinensis* Scopoli, 1786, Sonnerat (1782), Pl. 102. **Fig./Sl. 87:** *Columba nivea* Scopoli, 1786, Sonnerat (1776), Pl. 20. **Fig./Sl. 88:** *Columba luzonica* Scopoli, 1786, Sonnerat (1776), Pl. 21. **Fig./Sl. 89:** *Columba cinerea* Scopoli, 1786, Sonnerat (1776), Pl. 22.



Fig./Sl. 90: *Columba myristicivora* Scopoli, 1786, Sonnerat (1776), Pl. 102. **Figs./Sl. 91:** *Columba viridis* Scopoli, 1786, Sonnerat (1776), Pl. 64, 65. **Fig./Sl. 92:** *Columba pileata* Scopoli, 1786, Sonnerat (1776), Pl. 66. **Fig./Sl. 93:** *Columba bicolor* Scopoli, 1786, Sonnerat (1776), Pl. 103. **Fig./Sl. 94:** *Columba pulcherrima* Scopoli, 1786, Sonnerat (1776), Pl. 67. **Fig./Sl. 95:** *Alauda malabarica* Scopoli, 1786 (1), *Alauda grisea* Scopoli, 1786 (2), Sonnerat (1782), Pl. 113. **Fig./Sl. 96:** *Turdus malacensis* Scopoli, 1786, Sonnerat (1782), Pl. 110. **Fig./Sl. 97:** *Ampelis malabarica* Scopoli, 1786 (1), *Sylvia lutea* Scopoli, 1786 (2), Sonnerat (1782), Pl. 114. **Fig./Sl. 98:** *Emberiza signata* Scopoli, 1786, Sonnerat (1776), Pl. 75. **Fig./Sl. 99:** *Tanagra macroura* Scopoli, 1786, Sonnerat (1776), Pl. 74. **Fig./Sl. 100:** *Motacilla luzonensis* Scopoli, 1786, Sonnerat (1776), Pl. 29. **Fig./Sl. 101:** *Muscicapa caeruleocephala* Scopoli, 1786 (1) Sonnerat (1776), Pl. 26. **Fig./Sl. 102:** *Muscicapa macroura* Scopoli, 1786 (1), *Muscicapa tessacourbe* Scopoli, 1786 (2), Sonnerat (1776), Pl. 27. **Fig./Sl. 103:** *Muscicapa goiavier* Scopoli, 1786, Sonnerat (1776), Pl. 28. **Fig./Sl. 104:** *Muscicapa panayensis* Scopoli, 1786, Sonnerat (1776), Pl. 73.

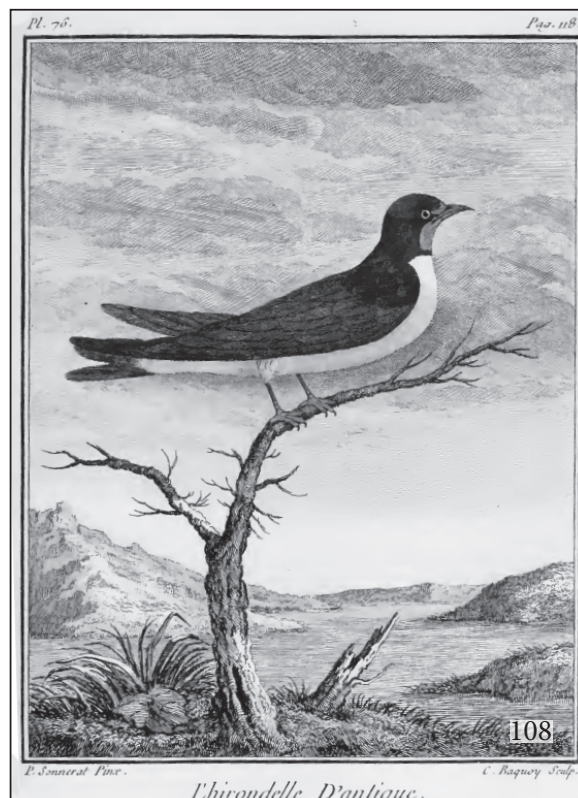
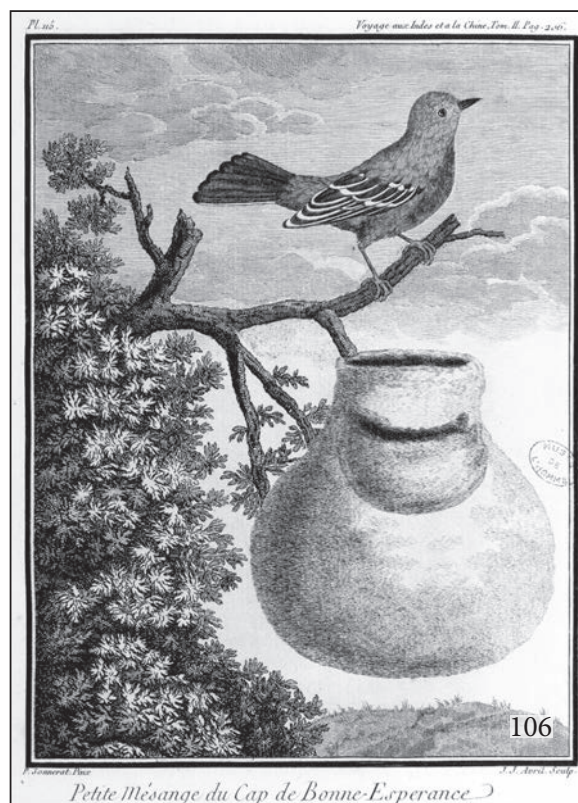
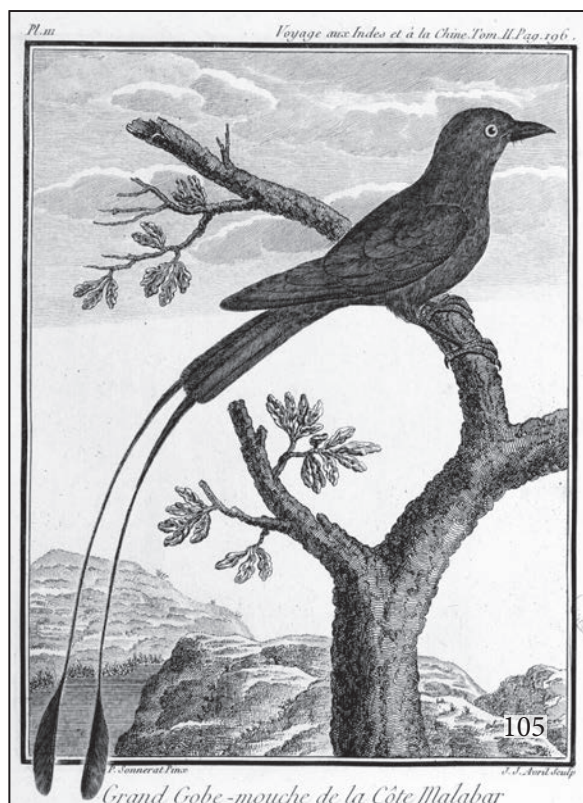


Fig./Sl. 105: *Muscicapa malabarica* Scopoli, 1786, Sonnerat (1782), Pl. 111. **Fig./Sl. 106:** *Sylvia capensis* Scopoli, 1786, Sonnerat (1782), Pl. 115. **Fig./Sl. 107:** *Parvus nelicourvi* Scopoli, 1786, Sonnerat (1782), Pl. 112. **Fig./Sl. 108:** *Hirundo gutturalis* Scopoli, 1786, Sonnerat (1776), Pl. 76.



Fig./Sl. 109: *Fringilla alpina* Scopoli, 1788, Scopoli (1788), Tab. 18.

Society in Paris (*Soc. Regia Oeconomica Parisiensis*) and among his correspondents Scopoli listed also french naturalist Michel Adanson (1727–1806) (Scopoli, 1788; Voss, 1881). The correspondence between Scopoli and Adanson was not yet studied, and Adanson might gave more data on Sonnerat's specimens that were accessible to Scopoli beside Sonnerat's figures and texts. There is no evidence that Scopoli and Sonnerat would have any direct correspondence. Anyhow, there is no evidence that Scopoli would travel outside Holy Roman Empire (Voss, 1881; Petkovšek, 1977), so he could not had seen Sonnerat's specimens stored in Paris. His descriptions were therefore based exclusively on Sonnerat's writings and especially on illustrations. Sonnerat and, consequently, Scopoli based their descriptions mainly on adult males, but not in all cases, e.g., females in Asian Blue Quail *Synoicus chinensis lineatus* (Fig. 37) and Nelicourvi Weaver *Ploceus nelicourvi* (Fig. 107), or non-breeding or immature birds in Pheasant-tailed Jacana *Hydrophasianus chirurgus* (Fig. 76), Bridled Tern *Onychoprion anaethetus* (Fig. 68), and African Spoonbill *Platalea alba* (Fig. 71). Since Scopoli's descriptions are not

based on type specimens, but only on figures an important taxonomic question raises here. If figures were the only material background of new species descriptions, then they should be regarded as types as well. In botany this is solved with designation of iconotypes (Silva, 1993), which are lacking in zoology (International Commission on Zoological Nomenclature, 1999). The Scopoli's descriptions of Sonnerat birds are not the only descriptions that were based solely on figures (and text) and not on specimens, since this was practised also by other early Linnean taxonomists, including Carl Linnaeus himself (e.g. Linnaeus descriptions of the Wallcreeper *Tichodroma muraria* and the Fat Dormouse *Glis glis* in Linnaeus (1766) were based solely on written descriptions of Scopoli and not by specimens examinations; Barbagli et al., 1997; Kryštufek et al., 2021). However, there is no review yet that would evaluate non-specimen based descriptions in ornithology or zoology neither what value these illustrations have as types in zoological nomenclature and taxonomy. However, clear historical identification of specimens, that served in the preparation of key figures (Voisin et al. 2004), or designation of neotypes (Kryštufek et al., 2021) are needed to stabilize the taxon names and define type localities.

The most interesting illustration of Sonnerat, however, is that of the Buff-spotted Flameback *Chrysocolaptes lucidus*. Four woodpecker figures are illustrated in Sonnerat (1776), and two of them refer to a larger woodpecker, Pl. 36 (Fig. 51) and 37 (Fig. 52). However, Scopoli (1786b) made a mistake and referred Pl. 36 to two descriptions, *Picus menstruus* and *Picus lucidus*. Newton (1882) suggested a correction and assigned Pl. 37 to *Picus lucidus*, while Stark (1903) assigned *Picus menstruus* to African species *Dendropicos griseocephalus* (Boddaert, 1783). The scaly pattern of the underside of the woodpecker at Pl. 37 certainly fits the adult Buff-spotted Flameback, but the specimen illustrated has no crest, a dark upperpart including the head, and particularly conspicuous white spots on the tail forming a white tail band, which Sonnerat (1776) also specifically refers to in the text. No such large woodpecker is currently known from the Philippines, from where this species was described, nor are there any similar large woodpeckers elsewhere (Winkler et al., 1995). It is therefore possible that the specimens on Pl. 37 actually represents a currently undescribed and possibly extinct species. All currently known recent extinctions of woodpeckers (Picidae) are from the New World (Hume & Walters, 2012), and this would be the first example from Asia. Indeed, this would not be the first discovery of an extinct species in the writings of Pierre Sonnerat, what is also the case of the extinct shrew *Diplomesodon sonnerati* from southern India (Cheke, 2011). There is one extant specimen of the Buff-spotted Flameback in the Sonnerat collection held at the Muséum National d'Histoire Naturelle in Paris (Fig. 110), but of an atypical dark juvenile female



Fig. 110: Atypical specimen of young female of *Chrysocolaptes lucidus* (Scopoli, 1786) collected by Pierre Sonnerat between 1769 and 1775 on Philippines (MNHN-ZO-2009-955; Muséum National d'Histoire Naturelle in Paris).

Sl. 110: Netipični primerek mlade samice vrste *Chrysocolaptes lucidus* (Scopoli, 1786), ki jo je Pierre Sonnerat ujel med leti 1769 in 1775 na Filipinih (MNHN-ZO-2009-955; Muséum National d'Histoire Naturelle, Pariz).

(Voisin & Voisin, 2010), which does not resemble the bird on Pl. 37 (Fig. 52).

Collections with Scopoli's type specimens and their preservation status

Scopoli's type specimens were stored in at least four collections (Appendix 1): (1) own Scopoli's collection (coll. Joannes A. Scopoli), (2) collection of count Francesco Annibale Della Torre (coll. Franz Hannibal von Thurn), (3) Imperial ZOO in Vienna (here Scopoli observed only live specimens) and (4) collection of Pierre Sonnerat (Coll. Pierre Sonnerat), which Scopoli had used only indirectly since he made his descriptions only on Sonnerat's figures and texts and not by examining the specimens.

1.) Collection of Joannes Antonius Scopoli

In Idria, J.A. Scopoli built a large natural history collection of plants, insects, and vertebrates, including birds (Stresemann, 1923; Gregori, 2008), which were described in Scopoli (1769). The collection included type material for at least 34 new bird taxa. In addition, there was probably also a type specimen of the Wallcreeper *Tichodroma muraria* described by Linnaeus (1766) to be sent by Scopoli to Linnaeus, but it is not clear from the letters that Scopoli actually sent it and that Linnaeus based the description only on Scopoli's letters (Barbagli et al., 1997; Soban, 2004). No specimen of the Wallcreeper is preserved in the Linnaeus collection at the museums in Uppsala and Stockholm (Wallin, 2001; U. Johansson, pers. comm.). When Scopoli left Idria in 1769, he probably took his collection with him and eventually brought it to Pavia (Italy), Scopoli's last residence,

where he also died in 1788. The ornithological part of the collection in Pavia consisted of 250 bird specimens, which were kept in the Natural History Museum of the University of Pavia, but unfortunately the collection did not survive (Steinheimer, 2005; Violani & Rovati, 2010). However, Scopoli also exchanged material with other collectors, as evidenced by letters to Linnaeus, so some specimens may survive in other collections. Scopoli's successor in Idria, Baltazar Hacquet, built a large collection that was later stored in Ljubljana (Jezernik, 2009). With the exception of the herbarium (now stored in the Slovenian Museum of Natural History; Praprotnik, 2015), all other parts of the collection were destroyed. Albegger (2015) reported that some specimens of Scopoli and Hacquet may have survived in the collection of Count Egger of Carinthia, which came to the Universalmuseum Joanneum in Graz in 1815, although further study of this historical collection is needed because the original labels have been lost.

2.) Collection of count Francesco Annibale Della Torre (germ. Franz Hannibal von Thurn)

In the letter of 7 March 1765, Scopoli reported to Linnaeus about the bird collection of Della Torre (*Aves Musaei Torriani*) in Vienna, which he had visited in 1763, as can be seen from the letter of 22 October 1763, in which he writes about his three-month stay in Vienna (Soban, 2004). From the Della Torre collection, Scopoli (1769) described at least 27 new bird species (Appendix 1). Scopoli (1769) described that this was a collection of Count Francesco Annibale Della Torre (*Excell. Comit. Francisci Annib. Turriani*). Count Francesco Annibale Della Torre (1699-1768) was born in Gradisca near Gorica in Italy near the Italian-Slovenian border and was a member of the Friulian noble family Della Torre, Lords of Duino (Dorsi 2021). He studied law and theology in Graz, Salzburg, Parma, and Rome, but his uncle Raimondo Ferdinando Rabatta, archbishop of Passau, helped him become an official archbishop's representative in Vienna (Santon, 2011). He died in Vienna in 1768. Since he was a celibate clergyman, he appointed his brother Federico Luigi Della Torre (1709-1773), Lord of Duino, as his heir (Dorsi, 2021), but the bird collection was taken by Jesuits after his death in 1768 (Fitzinger, 1856). In 1773 after abolishment of Jesuit order the collection was handed over to the University of Vienna (Fitzinger, 1856; Stresemann, 1923) and stored in zoological collection at the Faculty of Life Sciences, where no certain specimens are found (Steinheimer, 2005). The origin of the specimens in the Della Torre collection is not known, although they probably came mainly from NE Italy (Friuli, Duino) and the northern Adriatic (Friuli Venezia Giulia), although some exotic specimens came from menageries, probably in Austria.

3.) Imperial ZOO Schönbrunn (Vivarium Caesareum)

The imperial ZOO Schönbrunn (*der Menagerie zu Schönbrunn*) was a rich collection of exotic and rare

animals, mainly mammals and birds, collected during various expeditions by naturalists on behalf of the Austrian emperor (Fitzinger, 1853). The first menagerie was founded in 1552 by Maximilian II., but later ceased to operate continuously. The third establishment was founded in 1716 by Prince Eugene of Savoy and was purchased by Emperor Carl VI. after his death. In 1732 the menagerie was moved to Schönbrunn by Emperor Franz I. Stephan, the husband of Maria Theresa. J. A. Scopoli probably visited ZOO in 1763, as stated in a letter to Linnaeus dated on 22 October 1763, in which he briefly mentioned the Della Torre collection and the Imperial ZOO (Soban, 2004). Fitzinger (1853) gives a detailed overview of the animals that ZOO owned at that time, and some of them were also illustrated (Jacquin, 1784). Unfortunately, no Schönbrunn specimens from this period are preserved in the museum collection (von Pezeln, 1890). According to Scopoli (1769), there was at least 8 new species described from Imperial ZOO, but not all are resolved as a revision of Scopoli's descriptions of birds from the *Vivarium Caesareum*, provided in part by Gregori (2008), is needed in comparison with the list of Fitzinger (1853) and the illustrations of Jacquin (1784).

4.) Collection of Pierre Sonnerat

The bird descriptions in Scopoli (1786b) were based on two publications by the French naturalist Pierre Sonnerat on his expeditions to Indonesia, the Philippines, the Seychelles, and parts of Africa (Sonnerat, 1776) and to China, India, Malaysia, Madagascar, and Mauritius (Sonnerat, 1782). Sonnerat actually did not land on New Guinea, which is mentioned by several species as type locality, but he visited nearby island Pulau Gebe (Pasfield, 1892). In 1768 Sonnerat joined the expedition to Mascarene Islands with naturalist Pierre Poivre (1719 – 1786), Sonnerat's uncle, and secondly in 1771 to Moluccas (Pasfield, 1892), where both naturalists collected also bird specimens, therefore Poivre's specimens were later also included into Sonnerat's collection (Stresemann, 1952). Sonnerat's descriptions were accompanied by illustrations made from collected material. Sonnerat's bird specimens were kept in the King's Cabinet in Paris (Berlioz, 1950), which was curated by Georges-Louis Leclerc, Comte de Buffon (1707-1788). Although J.A. Scopoli never saw specimens of Sonnerat, but only illustrations based on them, the specimens of Sonnerat and Poivre can be considered syntypes for the descriptions of Scopoli (1786b), 101 new bird taxa. Today, the collection is kept at the Muséum National d'Histoire Naturelle in Paris (Berlioz, 1950), and at least eight bird taxa collected by Sonnerat are still preserved according to the published specimen catalogue (<https://science.mnhn.fr/institution/mnhn/collection/zo/item/search/form>). Two specimens are referred to as syntypes of the descriptions of Scopoli (1786b) (Appendix 1; Voisin *et al.*, 2004): Mauritius Blue Pigeon *Alectroenas nitidissimus* (Fig. 111, cf. Fig. 85) and Seychelles Blue Pigeon *Alectroenas pulcherrimus* (Fig. 112, cf. Fig. 94).



Fig. 111: The syntype of *Alectoenas nitidissimus* (Scopoli, 1786), today extinct species, collected by Pierre Sonnerat between 1769 and 1781 on Mauritius (MNHN-ZO-MO-2000-727; Muséum National d'Histoire Naturelle in Paris).

Sl. 111: Sintip vrste *Alectoenas nitidissimus* (Scopoli, 1786), danes izumrle vrste, ki jo je ujel Pierre Sonnerat med leti 1769 in 1781 na Mavricijusu (MNHN-ZO-MO-2000-727; Muséum National d'Histoire Naturelle, Pariz).



Fig. 112: The syntype of *Alectoenas pulcherrimus* (Scopoli, 1786) collected by Pierre Sonnerat between 1769 and 1775 on Seychelles (MNHN-ZO-MO-2002-138; Muséum National d'Histoire Naturelle in Paris).

Sl. 112: Sintip vrste *Alectoenas pulcherrimus* (Scopoli, 1786), ki jo je ujel Pierre Sonnerat med leti 1769 in 1775 na Sejšelih (MNHN-ZO-MO-2002-138; Muséum National d'Histoire Naturelle, Pariz).



Fig. 113: Syntype (referred to as holotype) of *Psittacus guenbyensis* Scopoli, 1786 collected by Pierre Sonnerat between 1769 and 1772 on Pulau Gebe Island, Halmahera / Maluku Islands (MNHN-ZO-MO-2004-129; Muséum National d'Histoire Naturelle in Paris).

Sl. 113: Sintip vrste (smatran kot holotip) *Psittacus guenbyensis* Scopoli, 1786, ki ga je ujel Pierre Sonnerat med leti 1769 in 1772 na otoku Pulau Gebe / otočje Maluku (MNHN-ZO-MO-2004-129; Muséum National d'Histoire Naturelle, Pariz).

In the collection of Sonnerat at the Muséum National d'Histoire Naturelle in Paris there is another specimen designated as a type specimen of *Psittacus guenbyensis* Scopoli, 1786 (Fig. 113; MNHN-ZO-MO -2004-129). The specimen is currently referred to as a holotype (Voisin & Voisin, 2008), which is clearly incorrect because the specimen was not referred to as a holotype by Scopoli, nor had Scopoli seen it, so the correct designation would be a syntype or lectotype. The description by Scopoli (1786b) was based on Pl. 109 (Fig. 31) in Sonnerat (1776). However, the taxon is a senior synonym of *Eos squamata riciniata* (Bechstein, 1811) and therefore does not conform to the concept of the Principle of Priority, whereby the valid name of a taxon is the oldest available name applied to it (International Commission on Zoological Nomenclature 1999), what was already proposed by Oberholser (1918). The Sonnerat-Piovre bird collection in Muséum National d'Histoire Naturelle in Paris still must be studied in terms of determining syntypes of Scopoli's bird taxa.

CONCLUSIONS

The aim of this work was to review the existing knowledge on the new bird taxa descriptions by Joannes Antonius Scopoli, a still underestimated early European or-

nithologist. With respect to Scopoli's ornithological legacy, there are still many questions to be addressed, especially considering still incomplete taxonomic revision of his bird descriptions, some of which are the first scientific descriptions after Linnaeus (1758) and should be considered in the concept of the Principle of Priority and validation of scientific bird names (International Commission on Zoological Nomenclature, 1999). Secondly, from a museological point of view, there are still open questions regarding the existence of Scopoli's type specimens that could be kept in some museum collections. This article summarizes some basic information from published and online sources, but further work should focus on researching archives and museum collections. Moreover, in museums worldwide there are few specimens of birds from type localities in Carniola (Slovenia) described by Scopoli (1769), so the Slovenian Museum of Natural History in Ljubljana could serve as a potential set of neotypes for future taxonomic studies. From Carniola (Slovenia) there are at least 28 new bird taxa described by J.A. Scopoli with type localities in Slovenia (all described in 1769). Five of them are also valid species today: Little Crane *Zapornia parva* (Scopoli, 1769), Squacco Heron *Ardeola ralloides* (Scopoli, 1769), Little Owl *Athene noctua* (Scopoli, 1769), Alpine Accentor *Prunella collaris* (Scopoli, 1769) and Black-Headed Bunting *Emberiza melanocephala* Scopoli, 1769.

Appendix 1: Overview of new bird taxa described by Joannes A. Scopoli listed in chronological publication order with remarks on type localities cited by Scopoli (in brackets are given countries interpreted according to given exact type localities or in valid taxa countries were corrected according to taxonomic revision since original type localities might be wrong, especially in species names following Sonnerat's descriptions; type localities on other descriptions remained unresolved), cited collections with types, figure references of types or species illustrations, overview of survived existing types in museum collections, current taxonomic status of Scopoli's bird taxa with literature interpretation of (sub)species identity, interpretation sources and remarks explaining existing taxonomic issues and further examination needs. Figures of Sonnerat (1776, 1782) has been corrected according to Newton (1882). Countries of origin of the name-bearing type specimen according to the last taxonomic revisions are extracted from del Hoyo et al. (1992, 1994, 1996, 1997, 1999, 2001, 2002, 2004, 2005, 2007, 2008, 2009) & Avibase database: <https://avibase.bsc-eoc.org/>.

Priloga 1: Pregled taksonov ptic, ki jih je navedel Scopoli (v oklepaju so podane države lokacij tipičnih lokalitet glede na sodobne interpretacije podane v taksonomskih revizijah, saj so originalno navedene lokacije lahko napačne, zlasti pri taksonih iz Sonneratovih opisov; tipične lokacije ostalih opisov so nerazrešene), navedeni zbirkami s tipičnim materialom, referenčne ilustracije, pregled ohranjenih tipičnih primerkov v muzejskih zbirkah, trenutni taksonomski status Scopoljevih taksonov ptic z objavljenimi interpretacijami (pod)vrstne identitete in literaturnimi viri ter opombe s taksonomskimi obrazložitvami in potrebami po nadaljnjih študijah. Številke Sonneratovih (1776, 1782) risb so bile popravljene po Newtonu (1882). Izvirne države tipičnih primerkov glede na zadnje taksonomske revizije so povzete po del Hoyo et al. (1992, 1994, 1996, 1997, 1999, 2001, 2002, 2004, 2005, 2007, 2008, 2009) & Avibase database: <https://avibase.bsc-eoc.org/>).

Scopoli's new species descriptions	Authority	Type localities as cited by Scopoli (in brackets are countries with type localities according to current taxonomic revisions)	Type collections cited by Scopoli	Figure references	Existing or newly designated type specimens	Current taxonomic status	Interpretation	Source of interpretation	Remarks
<i>Strix giu</i>	Scopoli (1769)	Carniola (W Slovenia)	Coll. Joannes A. Scopoli			junior synonym	<i>Otus scops</i> (Linnaeus, 1758)	Rey (1872), Hartert (1913)	should be examined further: the taxon is attributed to <i>Strix aluco</i> Linnaeus, 1758 (Rey 1872) or <i>Strix uralensis</i> Pallas, 1771 (Latham 1781, Gmelin 1788, Hartert 1913, Ponebšek 1917, Vrezec 2009)
<i>Strix sylvestris</i>	Scopoli (1769)	Carniola (W Slovenia)	Coll. Joannes A. Scopoli			uncertain		Latham (1781), Gmelin (1788), Rey (1872), Hartert (1913), Ponebšek (1917), Vrezec (2009)	
<i>Strix alba</i>	Scopoli (1769)	Friuli-Giulia (Italy)	Coll. Joannes A. Scopoli			valid taxon	<i>Tyto alba</i> (Scopoli, 1769)	Hartert (1913), Gill et al. (2023)	
<i>Strix noctua</i>	Scopoli (1769)	Ljubljana (Slovenia)	Coll. Joannes A. Scopoli			valid taxon	<i>Athene noctua</i> (Scopoli, 1769)	Hartert (1913), Baker (1930a), Gill et al. (2023)	
<i>Strix rufo</i>	Scopoli (1769)	Idrija (Slovenia)	Coll. Joannes A. Scopoli			junior synonym	<i>Strix aluco</i> Linnaeus, 1758	Rey (1872)	
<i>Psittacus formosus</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)			senior synonym	<i>Pezoporus wallicus</i> (Kerr, 1792)	Gregori (2008)	should be examined further: under the same name Latham (1790) described different species, so Scopoli's description was regarded doubtful (Slavadori 1891). Gregori (2008) attributed the taxon to <i>Pezoporus wallicus</i> (Kerr, 1792).
<i>Psittacus merulinus</i>	Scopoli (1769)		Imperial ZOO (Vienna) - live specimen			junior synonym	<i>Aratinga solstitialis</i> (Linnaeus, 1758)	Salvadori (1891)	
<i>Psittacus krameri</i>	Scopoli (1769)	(Senegal)	Coll. Joannes A. Scopoli			valid taxon	<i>Psittacula krameri</i> (Scopoli, 1769)	Baker (1930a), Gill et al. (2023)	

Scopoli's new species descriptions	Authority	Type localities as cited by Scopoli (in brackets are countries with type localities according to current taxonomic revisions)	Type collections cited by Scopoli	Figure references	Existing or newly designated type specimens	Current taxonomic status	Interpretation	Source of interpretation	Remarks
<i>Psittacus ruber</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)			uncertain			
<i>Psittacus pileatus</i>	Scopoli (1769)	(Brasil)	Coll. Count Franz Hannibal von Thurn (Vienna)			valid taxon	<i>Pionopsitta pileata</i> (Scopoli, 1769)	Salvadori (1891), Gill <i>et al.</i> (2023)	
<i>Psittacus cyanocephalus</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)			nomen nudum	<i>Pionus menstruus</i> (Linnaeus, 1766)	Salvadori (1891)	the name <i>Psittacus cyanocephalus</i> was preoccupied by <i>Psittacus cyanocephalus</i> Linnaeus, 1766 for another species (Salvadori 1891)
<i>Corvus maximus</i>	Scopoli (1769)	Carniola (W Slovenia)	Coll. Joannes A. Scopoli	Jonston 1650, Tab. 16 (Corvus) (Fig. 2)		junior synonym	<i>Corvus corax</i> Linnaeus, 1758	Hartert (1903)	
<i>Corvus vulgaris</i>	Scopoli (1769)	Carniola (W Slovenia)	Coll. Joannes A. Scopoli	Meyer 1752, Tab. 99 (Fig. 3)		junior synonym	<i>Corvus corone</i> Linnaeus, 1758	Gregori (2008)	
<i>Corvus rusticus</i>	Scopoli (1769)	Carniola (W Slovenia)	Coll. Joannes A. Scopoli	Jonston 1650, Tab. 17 (Scopoli wrongly cited Tab. 18) (Pica) (Fig. 4)		junior synonym	<i>Pica pica</i> (Linnaeus, 1758)	Hartert (1903)	
<i>Coracias cartagenensis</i>	Scopoli (1769)	Cartagena (Colombia)	Imperial ZOO (Vienna) - live specimen			uncertain			
<i>Certhia viridis</i>	Scopoli (1769)		Coll. Joannes A. Scopoli			uncertain			
<i>Anas leucocephala</i>	Scopoli (1769)	(Italy ?)	Coll. Count Franz Hannibal von Thurn (Vienna)			valid taxon	<i>Oxyura leucocephala</i> (Scopoli, 1769)	Blanford (1898), Baker (1930b), Gill <i>et al.</i> (2023)	
<i>Anas monacha</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)			junior synonym	<i>Branta bernicla</i> (Linnaeus, 1758)	Gregori (2008)	
<i>Anas ruficollis</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)			junior synonym	<i>Aythya ferina</i> (Linnaeus, 1758)	Rey (1872), Hartert (1920a), Baker (1930b)	Rey (1872) attributed the taxon to <i>Branta ruficollis</i> (Pallas, 1769), but attribution to more common <i>Aythya ferina</i> (Linnaeus, 1758) is more possible (Hartert 1920a, Baker 1930b)
<i>Anas melaura</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)			uncertain			

Scopoli's new species descriptions	Authority	Type localities as cited by Scopoli (in brackets are countries with type localities according to current taxonomic revisions)	Type collections cited by Scopoli	Figure references	Existing or newly designated type specimens	Current taxonomic status	Interpretation	Source of interpretation	Remarks
<i>Anas subterranea</i>	Scopoli (1769)	Cerknica Lake (Slovenia)	Coll. Joannes A. Scopoli	Steinberg 1758, Tab. 22 (Fig. 5)		uncertain		Scheibel (1919), Hartert (1920a), Vrezec (2023)	should be examined further: referred illustration in Steinberg (1758) in not detailed enough for interpretation, but different authors so far attributed the taxon to different species: <i>Aythya marila</i> (Linnaeus, 1761) (Linnaeus in a letter to Scopoli; Scopoli himself disagreed with Linnaeus; Soban 2004), <i>Aythya fuligula</i> (Linnaeus, 1758) (Scheibel 1919), <i>Tadorna tadorna</i> (Linnaeus, 1758) (Hartert 1920a), <i>Aythya nyroca</i> (Güldenstädt, 1770) (Vrezec 2023)
<i>Branta torrida</i>	Scopoli (1769)		Imperial ZOO (Vienna) - live specimen			uncertain			
<i>Branta albifrons</i>	Scopoli (1769)	(Italy ?)	Coll. Count Franz Hannibal von Thurn (Vienna)			valid taxon	<i>Anser albifrons</i> (Scopoli, 1769)	Blanford (1898), Hartert (1920a), Baker (1930b), Gill <i>et al.</i> (2023)	
<i>Mergus gulo</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)			junior synonym	<i>Mergus merganser</i> Linnaeus, 1758	Hartert (1920b), Baker (1930b)	
<i>Mergus aethiops</i>	Scopoli (1769)	Ljubljana (Slovenia)	Coll. Joannes A. Scopoli			junior synonym	<i>Mergus merganser</i> Linnaeus, 1758	Hartert (1920b)	
<i>Mergus albulus</i>	Scopoli (1769)	Carniola (W Slovenia)	Coll. Joannes A. Scopoli	Jonston 1650, Tab. 47 (Albulus aquaticus) (Fig. 6)		junior synonym	<i>Mergellus albellus</i> (Linnaeus, 1758)	Rey (1872), Hartert (1920b), Baker (1930b)	
<i>Mergus pannonicus</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)			junior synonym	<i>Mergellus albellus</i> (Linnaeus, 1758)	Hartert (1920b)	
<i>Plotus caudicans</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)			uncertain		Hartert (1920b), Baker (1930b)	should be examined further: Hartert (1920b) attributed the taxon to <i>Gavia stellata</i> (Pontoppidan, 1763), while Baker (1930b) to <i>Gavia arctica</i> (Linnaeus, 1758)
<i>Procellaria diomedea</i>	Scopoli (1769)	(Italy)	Coll. Count Franz Hannibal von Thurn (Vienna)	Jonston 1650, Tab. 46 (Diomedea avis) (Fig. 7)		valid taxon	<i>Calonectris diomedea</i> (Scopoli, 1769)	Peters (1931), Gill <i>et al.</i> (2023)	
<i>Colymbus nigricans</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)			junior synonym	<i>Tachybaptus ruficollis</i> (Pallas, 1764)	Hartert (1920b)	
<i>Colymbus vulgaris</i>	Scopoli (1769)	Carniola (W Slovenia)	Coll. Joannes A. Scopoli			senior synonym	<i>Podiceps grisegena</i> (Boddaert, 1783)	Hartert (1920b)	

Scopoli's new species descriptions	Authority	Type localities as cited by Scopoli (in brackets are countries with type localities according to current taxonomic revisions)	Type collections cited by Scopoli	Figure references	Existing or newly designated type specimens	Current taxonomic status	Interpretation	Source of interpretation	Remarks
<i>Larus cinereus</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)			junior synonym	<i>Larus canus</i> Linnaeus, 1758	Hartert (1921a)	
<i>Larus albus</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)			senior synonym	<i>Hydrocoleus minutus</i> (Pallas, 1776)	Hartert (1921a)	
<i>Larus merulinus</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)			junior synonym	<i>Chlidonias niger</i> (Linnaeus, 1758)	Hartert (1921a)	
<i>Larus quadricolor</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)			senior synonym	<i>Larus audouinii</i> Payraudeau, 1826	Hartert (1921a)	
<i>Larus bicolor</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)			uncertain		Hartert (1921a), Gregori (2008)	should be examined further: Hartert (1921a) attributed the taxon to <i>Sterna hirundo</i> Linnaeus, 1758, while Gregori (2008) to <i>Sterna albifrons</i> (Pallas, 1764)
<i>Larus sterna</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)			junior synonym	<i>Sterna hirundo</i> Linnaeus, 1758	Hartert (1921a)	
<i>Larus columbinus</i>	Scopoli (1769)	Carniola (W Slovenia)	Coll. Joannes A. Scopoli			junior synonym	<i>Sterna hirundo</i> Linnaeus, 1758	Hartert (1921a)	
<i>Ardea rufa</i>	Scopoli (1769)	Carniola (W Slovenia)	Coll. Joannes A. Scopoli			junior synonym	<i>Ardea purpurea</i> Linnaeus, 1766	Hartert (1920a)	
<i>Ardea rallioides</i>	Scopoli (1769)	Carniola (W Slovenia)	Coll. Joannes A. Scopoli			valid taxon	<i>Ardeola rallioides</i> (Scopoli, 1769)	Hartert (1920a), Gill et al. (2023)	
<i>Ardea nivea</i>	Scopoli (1769)	Carniola (W Slovenia)	Coll. Joannes A. Scopoli			junior synonym	<i>Egretta garzetta</i> (Linnaeus, 1766)	Gregori (2008)	
<i>Scolopax rufa</i>	Scopoli (1769)	Carniola (W Slovenia)	Coll. Joannes A. Scopoli			junior synonym	<i>Plegadis falcinellus</i> (Linnaeus, 1766)	Hartert (1920a), Baker (1930b), Gregori (2008)	
<i>Scolopax australis</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)			uncertain			
<i>Scolopax pica</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)			junior synonym	<i>Haematopus ostralegus</i> Linnaeus, 1758	Hartert (1921a)	
<i>Scolopax leucoptera</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)			uncertain			
<i>Scolopax glottis</i>	Scopoli (1769)	Carniola (W Slovenia)	Coll. Joannes A. Scopoli			senior synonym	<i>Callinago media</i> (Latham, 1787)	Gregori (2008)	
<i>Tringa porzana</i>	Scopoli (1769)	Carniola (W Slovenia)	Coll. Joannes A. Scopoli			uncertain			
<i>Fulica fuliginosa</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)			junior synonym	<i>Fulica atra</i> Linnaeus, 1758	Hartert (1921b)	

Scopoli's new species descriptions	Authority	Type localities as cited by Scopoli (in brackets are countries with type localities according to current taxonomic revisions)	Type collections cited by Scopoli	Figure references	Existing or newly designated type specimens	Current taxonomic status	Interpretation	Source of interpretation	Remarks
<i>Fulica albiventris</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)			junior synonym	<i>Fulica atra</i> Linnaeus, 1758	Hartert (1921b)	
<i>Rallus lariiformis</i>	Scopoli (1769)	Carniola (W Slovenia)	Coll. Joannes A. Scopoli			uncertain			
<i>Rallus parvus</i>	Scopoli (1769)	Carniola (W Slovenia)	Coll. Joannes A. Scopoli			valid taxon	<i>Zapornia parva</i> (Scopoli, 1769)	Hartert (1921b), Baker (1930a), Gill <i>et al.</i> (2023)	
<i>Rallus fulcula</i>	Scopoli (1769)	Ljubljana (Slovenia)	Coll. Joannes A. Scopoli			junior synonym	<i>Porzana porzana</i> (Linnaeus, 1766)	Hartert (1921b)	
<i>Tetrao nemesianus</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)	Aldrovandi 1637, Lib. 13, Cap. 18 (Fig. 8)		senior synonym	<i>Tetrao urogallus crassirostris</i> Brehm, CL, 1831	Gregori (2008)	
<i>Tetrao betulinus</i>	Scopoli (1769)		Coll. Count Franz Hannibal von Thurn (Vienna)			junior synonym	<i>Lyrurus tetrix</i> (Linnaeus, 1758)	Hartert (1921b)	
<i>Columba mugens</i>	Scopoli (1769)		Imperial ZOO (Vienna) - live specimen			junior synonym	<i>Goura cristata</i> (Pallas, 1764)	Latham (1823), Gregori (2008)	
<i>Columba tetraoides</i>	Scopoli (1769)		Imperial ZOO (Vienna) - live specimen			uncertain			
<i>Alauda brumalis</i>	Scopoli (1769)	Tyrol (Italy)	not specified (probably coll. Scopoli)			junior synonym	<i>Anthus pratensis</i> (Linnaeus, 1758)	Scopoli (1786a), Gregori (2008)	
<i>Sturnus collaris</i>	Scopoli (1769)	Carniola (NW Slovenia), Carinthia (Austria)	Coll. Joannes A. Scopoli			valid taxon	<i>Prunella collaris</i> (Scopoli, 1769)	Hartert (1905), Gill <i>et al.</i> (2023)	according to opinion of Scheibel (1919) the type locality is only Carniola (W Slovenia)
<i>Loxia torrida</i>	Scopoli (1769)	(Venezuela)	Imperial ZOO (Vienna) - live specimen			valid taxon	<i>Sporophila angolensis torrida</i> (Scopoli, 1769)	Paynter & Storer (1970), Gill <i>et al.</i> (2023)	
<i>Emberiza melanocephala</i>	Scopoli (1769)	Carniola (SW Slovenia)	Coll. Joannes A. Scopoli			valid taxon	<i>Emberiza melanocephala</i> Scopoli, 1769	Hartert (1903), Gill <i>et al.</i> (2023)	as type locality Scheibel (1919) suggested area near the coast in Carniola (SW Slovenia)
<i>Emberiza barbata</i>	Scopoli (1769)	Carniola (W Slovenia)	Coll. Joannes A. Scopoli			junior synonym	<i>Emberiza cia</i> Linnaeus, 1767	Hartert (1903)	
<i>Emberiza brumalis</i>	Scopoli (1769)	Tyrol (Italy)	Coll. Joannes A. Scopoli			junior synonym	<i>Carduelis citrinella</i> (Pallas, 1764)	Hartert (1903)	
<i>Emberiza luctuosa</i>	Scopoli (1769)		Imperial ZOO (Vienna) - live specimen			junior synonym	<i>Ficedula hypoleuca</i> (Pallas, 1764)	Hartert (1903)	
<i>Fringilla mariope</i>	Scopoli (1769)		Imperial ZOO (Vienna) - live specimen			junior synonym	<i>Passerina ciris</i> (Linnaeus, 1758)	Gregori (2008)	

Scopoli's new species descriptions	Authority	Type localities as cited by Scopoli (in brackets are countries with type localities according to current taxonomic revisions)	Type collections cited by Scopoli	Figure references	Existing or newly designated type specimens	Current taxonomic status	Interpretation	Source of interpretation	Remarks
<i>Motacilla boarula</i>	Scopoli (1769)	Carniolia (W Slovenia)	Coll. Joannes A. Scopoli	Aldrovandi 1637, Lib. 17, Cap. 25 (Fig. 9)		junior synonym	<i>Motacilla flava</i> Linnaeus, 1758	Gregori (2008)	Scopoli (1769) probably made mistake and attributed name <i>Motacilla flava</i> to the <i>Motacilla cinerea</i> Tunstall, 1771, and <i>Motacilla boarula</i> to <i>Motacilla flava</i> Linnaeus, 1758.
<i>Sylvia zya</i>	Scopoli (1769)	Carniolia (W Slovenia)	Coll. Joannes A. Scopoli			junior synonym	<i>Saxicola rubetra</i> (Linnaeus, 1758)	Hartert (1905)	
<i>Sylvia muscipeta</i>	Scopoli (1769)	Carniolia (W Slovenia)	Coll. Joannes A. Scopoli	Jonston 1650, Tab. 45 (Muscipeta) (Fig. 10)		junior synonym	<i>Saxicola rubicola</i> (Linnaeus, 1766)	Hartert (1905)	
<i>Parus barbatus</i>	Scopoli (1769)	Carniolia (W Slovenia)	Coll. Joannes A. Scopoli			junior synonym	<i>Panurus biarmicus</i> (Linnaeus, 1758)	Gregori (2008)	
<i>Hirundo alpina</i>	Scopoli (1769)	Tyrol (Austria)	Coll. Joannes A. Scopoli			junior synonym	<i>Tachymarpis melba</i> (Linnaeus, 1758)	Hartert (1912), Gregori (2008)	
<i>Hirundo rupestris</i>	Scopoli (1769)	Tyrol (Austria)	Coll. Joannes A. Scopoli			valid taxon	<i>Phyonoprogne rupestris</i> (Scopoli, 1769)	Hartert (1905), Gill <i>et al.</i> (2023)	
<i>Alauda turdina</i>	Scopoli (1786a)	Insurbria, Tyrol (Italy)	not specified (probably coll. Scopoli)	Willughby 1676, Lib. 2, § 10: cited therein Aldrovandi 1637, Lib. 17, Cap. 26. (Fig. 11)		junior synonym	<i>Anthus trivialis</i> (Linnaeus, 1758)	Zander (1853)	Aldrovandi (1637) figure indicates <i>Prunella modularis</i> (Linnaeus, 1758) or even <i>Prunella collaris</i> (Scopoli, 1769)
<i>Alauda turlu</i>	Scopoli (1786a)		not specified (probably coll. Scopoli)			uncertain			
<i>Falco rufus</i>	Scopoli (1786b)	Ducatu Mediolensi (Italy)	not specified (probably coll. Scopoli)	Scopoli 1786b, Tab. 19 (Fig. 12)		junior synonym	<i>Falco vespertinus</i> Linnaeus, 1766	Newton (1882)	
<i>Vultur radiatus</i>	Scopoli (1786b)	Madagascar (Madagascar)	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 103 (Fig. 13)		valid taxon	<i>Polyboroides radiatus</i> (Scopoli, 1786)	Peters (1931), Gill <i>et al.</i> (2023)	
<i>Vultur calvus</i>	Scopoli (1786b)	India (India)	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 104 (Fig. 14)		valid taxon	<i>Sarcogyps calvus</i> (Scopoli, 1786)	Baker (1930a), Gill <i>et al.</i> (2023)	
<i>Vultur indicus</i>	Scopoli (1786b)	(India)	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 105 (Fig. 15)		valid taxon	<i>Gyps indicus</i> (Scopoli, 1786)	Baker (1930a), Gill <i>et al.</i> (2023)	
<i>Lanius philippinus</i>	Scopoli (1786b)	Philippines	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 25 (not cited by Scopoli) (Fig. 16)		junior synonym	<i>Ariamus leucorhynchus</i> (Linnaeus, 1771)	Walden (1877)	
<i>Lanius nasutus</i>	Scopoli (1786b)	New Guinea (Philippines)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 70 (Fig. 17)		valid taxon	<i>Lanius schach nasutus</i> Scopoli, 1786	Walden (1877), Gill <i>et al.</i> (2023)	

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<i>Lanius ruber</i>	Scopoli (1786b)	New Guinea	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 71 (Fig. 18)		uncertain			
<i>Lanius albus</i>	Scopoli (1786b)	New Guinea	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 72 (Fig. 19)		junior synonym	<i>Lanius excubitor</i> Linnaeus, 1758	Sherborn (1902)	
<i>Lanius rufus</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 106 (Fig. 20)		nomen nudum	<i>Dendrocitta vagabunda</i> (Latham, 1790)	Pittie & Dickinson (2010)	the name <i>Lanius rufus</i> was preoccupied by <i>Lanius rufus</i> Linnaeus, 1766 for another species (Pittie & Dickinson 2010)
<i>Lanius chinensis</i>	Scopoli (1786b)	(China)	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 107 (not cited by Scopoli) (Fig. 21)		valid taxon	<i>Pterorhinus chinensis</i> (Scopoli, 1786)	Baker (1930a), Gill <i>et al.</i> (2023)	
<i>Psittacus papou</i>	Scopoli (1786b)	China (New Guinea)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 111 (Fig. 22)		valid taxon	<i>Charmosyna papou</i> (Scopoli, 1786)	Salvadori (1891), Gill <i>et al.</i> (2023)	
<i>Psittacus signatus</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 42 (Scopoli wrongly cited Pl. 47) (Fig. 23)		junior synonym	<i>Psittacula cyanocephala</i> (Linnaeus, 1766)	Salvadori (1891)	
<i>Psittacus quianensis</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 43 (Fig. 24)		uncertain			
<i>Psittacus pileatus</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 44 (Fig. 25)		junior synonym	<i>Tanygnathus lucionensis</i> (Linnaeus, 1766)	Salvadori (1891)	
<i>Psittacus cingulatus</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 41 (Fig. 26)		junior synonym	<i>Touit batavicus</i> (Boddaert, 1783)	Salvadori (1891)	
<i>Psittacus melanopterus</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 40 (Fig. 27)		junior synonym	<i>Loriculus philippensis</i> (Müller, 1776)	Salvadori (1891)	
<i>Psittacus lunulatus</i>	Scopoli (1786b)	China (Philippines)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 39 (Fig. 28)		valid taxon	<i>Bolbopsittacus lunulatus</i> (Scopoli, 1786)	Salvadori (1891), Gill <i>et al.</i> (2023)	
<i>Psittacus leucophthalmos</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 38 (upper) (Fig. 29)		senior synonym	<i>Loriculus philippensis chrysonotus</i> Sclater, 1872	Walden (1877), Salvadori (1891)	
<i>Psittacus pumilus</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 38 (lower) (Fig. 29)		junior synonym	<i>Loriculus galgulus</i> (Linnaeus, 1758)	Salvadori (1891)	
<i>Psittacus polychloros</i>	Scopoli (1786b)	China (Indonesia)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 108 (Fig. 30)		valid taxon	<i>Eclectus polychloros</i> (Scopoli, 1786)	Stresemann (1952), Gill <i>et al.</i> (2023)	

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<i>Psittacus guenbyensis</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 109 (Fig. 31)	holotype (MNHN - ZO-MO -2004-129; Muséum National d'Histoire Naturelle, Paris, France)	senior synonym	<i>Eos squamata riciniata</i> (Bechstein, 1811)	Salvadori (1891), Oberholser (1918)	
<i>Psittacus ater</i>	Scopoli (1786b)	China (New Guinea)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 110 (Fig. 32)		valid taxon	<i>Chalcopsitta atra</i> (Scopoli, 1786)	Salvadori (1891), Gill <i>et al.</i> (2023)	
<i>Buceros panayensis</i>	Scopoli (1786b)	New Guinea	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 82, 83 (Fig. 33)		uncertain		Walden (1877), Finsch (1903)	should be examined further: the taxon is currently attributed to three different species, <i>Penelopides panini</i> (Boddaert, 1783), <i>Penelopides manillae</i> (Boddaert, 1783), and <i>Penelopides affinis</i> Tweeddale, A 1877
<i>Buceros birostris</i>	Scopoli (1786b)	Caromandel (India)	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 121 (Scopoli wrongly cited Pl. 119) (Fig. 34)		valid taxon	<i>Ocyrceros birostris</i> (Scopoli, 1786)	Baker (1930a), Gill <i>et al.</i> (2023)	
<i>Buceros pica</i>	Scopoli (1786b)	Malabar (India)	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 121 (second Pl. 121 in Sonnerat) (Fig. 35)		junior synonym	<i>Anthracoseros coronatus</i> (Boddaert, 1783)	Baker (1930a)	
<i>Oriolus cothurnix</i>	Scopoli (1786b)	New Guinea	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 105 (Fig. 36)		uncertain		International Commission on Zoological Nomenclature (1963)	The International Commission on Zoological Nomenclature declared the name as dubious taxon and suppressed it for the purposes of the Law of Priority.
<i>Oriolus lineatus</i>	Scopoli (1786b)	(Philippines)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 24 (not cited by Scopoli) (Fig. 37)		valid taxon	<i>Synoicus chinensis lineatus</i> (Scopoli, 1786)	Walden (1877), Gill <i>et al.</i> (2023)	
<i>Oriolus ocellatus</i>	Scopoli (1786b)	Luzon (Philippines), New Guinea	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 23 (Fig. 38)		valid taxon	<i>Turnix ocellatus</i> (Scopoli, 1786)	Walden (1877), Gill <i>et al.</i> (2023)	
<i>Xanthornus holosericeus</i>	Scopoli (1786b)	New Guinea (Philippines)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 68, 69 (Fig. 39)		valid taxon	<i>Amblyramphus holosericeus</i> (Scopoli, 1786)	Walden (1877), Gill <i>et al.</i> (2023)	
<i>Paradisea rex</i>	Scopoli (1786b)	New Guinea	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 95 (Fig. 40)		junior synonym	<i>Cicinnurus regius</i> (Linnaeus, 1758)	Iredale (1954)	subspecies <i>C. r. rex</i> (Scopoli, 1786) is now included in <i>C. r. regius</i> (Linnaeus, 1758) (Beehler & Pratt 2016)
<i>Paradisea penicillata</i>	Scopoli (1786b)	New Guinea	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 97 (Fig. 41)		junior synonym	<i>Parotia seflata</i> (Pennant, 1781)	Iredale (1954)	

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<i>Paradisaea viridis</i>	Scopoli (1786b)	New Guinea	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 99 (Fig. 42)		junior synonym	<i>Manucodia chalybatus</i> (Pennant, 1781)	Iredale (1954)	
<i>Gracula caerulea</i>	Scopoli (1786b)	China (China)	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 108 (Fig. 43)		valid taxon	<i>Myophonus caeruleus</i> (Scopoli, 1786)	Swinhoe (1871), Baker (1930a), Beehler & Pratt (2016)	
<i>Gracula cristata</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 109 (Fig. 44)		junior synonym	<i>Pycnonotus jocosus</i> (Linnaeus, 1758)	Blyth (1845)	
<i>Trogon luzonensis</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 34 (Fig. 45)		senior synonym	<i>Psilopogon haemacephalus roseus</i> (Dumont, 1805)	Walden (1877)	
<i>Cuculus variegatus</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 78 (Fig. 46)		uncertain			
<i>Cuculus flaviventris</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 79 (Fig. 47)		uncertain		Swinhoe (1871), Walden (1877)	should be examined further: Swinhoe (1871) attributed the taxon to <i>Hierococcyx hyperythrus</i> (Gould, 1856), and Walden (1877) to <i>Hierococcyx pectoralis</i> (Cabanis & Heine, 1863)
<i>Cuculus viridis</i>	Scopoli (1786b)	China (Philippines)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 80 (Fig. 48)		valid taxon	<i>Centropus viridis</i> (Scopoli, 1786)	Walden (1877), Gill et al. (2023)	
<i>Cuculus merulinus</i>	Scopoli (1786b)	China (Philippines)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 81 (Fig. 49)		valid taxon	<i>Cacomantis merulinus</i> (Scopoli, 1786)	Walden (1877), Baker (1930a), Gill et al. (2023)	
<i>Picus guineensis</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 35 (Fig. 50)		senior synonym	<i>Dendropicos fuscescens</i> (Vieillot, 1818)	Neumann (1900), Peters (1948)	
<i>Picus menstruus</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 36 (Fig. 51)		junior synonym	<i>Dendropicos griseocephalus</i> (Boddaert, 1783)	Stark (1903)	
<i>Picus lucidus</i>	Scopoli (1786b)	China (Philippines)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 37 (Scopoli wrongly cited Pl. 36) (Fig. 52)		valid taxon	<i>Chrysocolaptes lucidus</i> (Scopoli, 1786)	Walden (1877), Peters (1948), Gill et al. (2023)	There is a specimen of atypical female from Sonnerat collection preserved in Muséum National d'Histoire Naturelle, Paris, but see discussion for further details.
<i>Picus maculatus</i>	Scopoli (1786b)	China (Philippines)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 77 (Fig. 53)		valid taxon	<i>Yungipicus maculatus</i> (Scopoli, 1786)	Peters (1948), Gill et al. (2023)	
<i>Alcedo coromandeliana</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 118 (Fig. 54)		senior synonym	<i>Halcyon coromanda</i> (Latham, 1790)	Cassin (1852), Sharpe (1868-71), Swinhoe (1871), Walden (1877), Baker (1930a)	

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<i>Alcedo albiventris</i>	Scopoli (1786b)	New Guinea (South Africa)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 31 (Fig. 55)	neotype (The Natal Museum, South Africa)	valid taxon	<i>Halcyon albiventris</i> (Scopoli, 1786)	Sharpe (1868-71), Clancey (1959), Gill <i>et al.</i> (2023)	
<i>Alcedo collaris</i>	Scopoli (1786b)	New Guinea (Philippines)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 33 (Fig. 56)		valid taxon	<i>Todiramphus chloris collaris</i> (Scopoli, 1786)	Cassin (1852), Sharpe (1868-71), Walden (1877), Gill <i>et al.</i> (2023)	
<i>Alcedo undulata</i>	Scopoli (1786b)	New Guinea	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 106 (Fig. 57)		junior synonym	<i>Dacelo novaeguineae</i> (Hermann, 1783)	Cassin (1852), Sharpe (1868-71)	
<i>Alcedo variegata</i>	Scopoli (1786b)		Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 107 (not cited by Scopoli) (Fig. 58)		uncertain		Cassin (1852), Sharpe (1868-71)	should be examined further: Cassin (1852) and Sharpe (1868-71) attributed the taxon to <i>Halcyon chelicuti</i> (Stanley, 1814), but it does not suite the reference figure, and its long legs does not suit any of Coraciiformes species either
<i>Merops bruneus</i>	Scopoli (1786b)	New Guinea	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 100 (incompletely cited by Scopoli) (Fig. 59)		junior synonym	<i>Epimachus fastosus</i> (Hermann, 1783)	Iredale (1954)	
<i>Merops maximus</i>	Scopoli (1786b)		Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 101 (not cited by Scopoli) (Fig. 60)		junior synonym	<i>Epimachus fastosus</i> (Hermann, 1783)	Iredale (1954)	
<i>Certhia canora</i>	Scopoli (1786b)	Cape of Good Hope	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 116-1 (Fig. 61)		Uncertain			
<i>Certhia malacensis</i>	Scopoli (1786b)	Cape of Good Hope (Malaysia)	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 116-2 (Fig. 61)		valid taxon	<i>Anthreptes malacensis</i> (Scopoli, 1786)	Baker (1930a), Gill <i>et al.</i> (2023)	
<i>Certhia coccinea</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 61 (117)-1 (Fig. 62)		junior synonym	<i>Dicaeum cruentatum</i> (Linnaeus 1758)	Baker (1930a)	
<i>Certhia trigonostigma</i>	Scopoli (1786b)	China (Malaysia)	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 61 (117)-2 (Fig. 62)		valid taxon	<i>Dicaeum trigonostigma</i> (Scopoli, 1786)	Baker (1930a), Gill <i>et al.</i> (2023)	
<i>Certhia grisea</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 61 (117)-3 (Fig. 62)		Uncertain			
<i>Certhia lutea</i>	Scopoli (1786b)	Caromandel	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 119 (Fig. 63)		Uncertain			
<i>Certhia quadricolor</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 30-A, B (Fig. 64)		junior synonym	<i>Leptocoma zeylonica</i> (Linnaeus, 1766)	Baker (1930a)	

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<i>Apterodita longirostris</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 113 (Fig. 65), Pennant 1781, Tab. 14 (Fig. 66)		junior synonym	<i>Apterodytes patagonicus</i> Miller, 1778	Checklist Committee (OSNZ) (2022)	
<i>Apterodita platyrhinos</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 114 (Fig. 67)		Uncertain			
<i>Sterna anaethetus</i>	Scopoli (1786b)	New Guinea (Philippines)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 84 (Fig. 68)		valid taxon	<i>Onychoprion anaethetus</i> (Scopoli, 1786)	Swinhoe (1871), Walden (1877), Blanford (1898), Baker (1930b), Gill <i>et al.</i> (2023)	
<i>Sterna pileata</i>	Scopoli (1786b)	New Guinea (Philippines)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 85 (Fig. 69)		valid taxon	<i>Anous stolidus pileatus</i> (Scopoli, 1786)	Walden (1877), Baker (1930b), Gill <i>et al.</i> (2023)	
<i>Sterna multicolor</i>	Scopoli (1786b)	New Guinea	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 55 (Fig. 70)		uncertain			reference figure suggests <i>Dendrocygna viduata</i> (Linnaeus, 1766)
<i>Platalea alba</i>	Scopoli (1786b)	New Guinea (South Africa)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 51 (Fig. 71)		valid taxon	<i>Platalea alba</i> Scopoli, 1786	Stark (1906), Gill <i>et al.</i> (2023)	
<i>Platalea cristata</i>	Scopoli (1786b)		Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 52 (not cited by Scopoli) (Fig. 72)		uncertain			reference figure suggests <i>Platalea regia</i> Gould, 1838
<i>Tantalus rufus</i>	Scopoli (1786b)	New Guinea	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 47 (Fig. 73)		uncertain			
<i>Tantalus variegatus</i>	Scopoli (1786b)	(Philippines)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 48 (not cited by Scopoli) (Fig. 74)		valid taxon	<i>Numenius phaeopus variegatus</i> (Scopoli, 1786)	Walden (1877), Hartert (1921a), Baker (1930b), Gill <i>et al.</i> (2023)	
<i>Tringa fasciata</i>	Scopoli (1786b)	India	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 96 (Fig. 75)		nomen nudum	<i>Pterocles indicus</i> (Gmelin, 1789)	Hartert (1920b), Baker (1930a)	the name <i>Tringa fasciata</i> was preoccupied by <i>Tringa fasciata</i> Gmelin, 1774 for another species
<i>Tringa chirurgus</i>	Scopoli (1786b)	New Guinea (Philippines)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 45 (Fig. 76)		valid taxon	<i>Hydrophasianus chirurgus</i> (Scopoli, 1786)	Swinhoe (1871), Walden (1877), Baker (1930a), Gill <i>et al.</i> (2023)	
<i>Charadrius dubius</i>	Scopoli (1786b)	New Guinea (Philippines)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 46 (Fig. 77)		valid taxon	<i>Charadrius dubius</i> Scopoli, 1786	Walden (1877), Blanford (1898), Baker (1930b), Gill <i>et al.</i> (2023)	

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<i>Charadrius cristatus</i>	Scopoli (1786b)	New Guinea, Cape of Good Hope	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 49 (Fig. 78)		nomen nudum	<i>Megapodius cumingi</i> Dillwyn, 1853	Walden (1877)	the name <i>Charadrius cristatus</i> was preoccupied by <i>Charadrius cristatus</i> Linnaeus, 1758 for another species, however reference figure should be further examined as it does not resemble suggested taxon <i>Megapodius cumingi</i> Dillwyn, 1853
<i>Otis secretarius</i>	Scopoli (1786b)	Philippines, Cape of Good Hope	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 50 (Fig. 79)		junior synonym	<i>Sagittarius serpentarius</i> (Miller, 1779)	Slater (1903)	
<i>Pavo malacensis</i>	Scopoli (1786b)	E India (Malaysia)	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 99 (Fig. 80); Edwards 1747, Tab. 67 (Fig. 81)		valid taxon	<i>Polyplectron malacense</i> (Scopoli, 1786)	Baker (1930a), Gill et al. (2023)	
<i>Phasianus rouloul</i>	Scopoli (1786b)	E India (Malaysia)	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 100 (Fig. 82)		valid taxon	<i>Rollulus rouloul</i> (Scopoli, 1786)	Baker (1930a), Gill et al. (2023)	
<i>Tetrao pintadeanus</i>	Scopoli (1786b)	E India (China)	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 97 (Fig. 83)		valid taxon	<i>Francolinus pintadeanus</i> (Scopoli, 1786)	Baker (1930a), Gill et al. (2023)	
<i>Tetrao madagarensis</i>	Scopoli (1786b)	E India (Madagascar)	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 98 (Fig. 84)		valid taxon	<i>Margaroperdix madagarensis</i> (Scopoli, 1786)	Gill et al. (2023)	
<i>Columba nitidissima</i>	Scopoli (1786b)	E India (Mauritius)	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 101 (Fig. 85)	syntype (MHN-ZO-MO-2000-727; Muséum National d'Histoire Naturelle, Paris, France)	valid taxon	<i>Alectroenas nitidissimus</i> (Scopoli, 1786)	Gill et al. (2023)	
<i>Columba chinensis</i>	Scopoli (1786b)	E India (China)	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 102 (Fig. 86)		valid taxon	<i>Spilopelia chinensis</i> (Scopoli, 1786)	Swinhoe (1871), Baker (1930a), Gill et al. (2023)	
<i>Columba nivea</i>	Scopoli (1786b)	Luzon (Philippines)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 20 (Fig. 87)		nomen alternativum	<i>Gallicolumba luzonica</i> (Scopoli, 1786)	Walden (1877)	Scopoli described leucistic individual of <i>Gallicolumba luzonica</i> (Scopoli, 1786)
<i>Columba luzonica</i>	Scopoli (1786b)	Luzon (Philippines)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 21 (Fig. 88)		valid taxon	<i>Gallicolumba luzonica</i> (Scopoli, 1786)	Walden (1877), Gill et al. (2023)	
<i>Columba cinerea</i>	Scopoli (1786b)	Luzon (Philippines)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 22 (Fig. 89)		uncertain		Blyth (1845), Walden (1877)	should be examined further: the name was categorized as doubtful (Blyth 1845, Walden 1877), but further examination of the reference figure is required

Scopoli's new species descriptions	Authority	Type localities as cited by Scopoli (in brackets are countries with type localities according to current taxonomic revisions)	Type collections cited by Scopoli	Figure references	Existing or newly designated type specimens	Current taxonomic status	Interpretation	Source of interpretation	Remarks
<i>Columba myristicivora</i>	Scopoli (1786b)	Luzon (Indonesia)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 102 (Scopoli wrongly cited Pl. 103) (Fig. 90)		valid taxon	<i>Ducula myristicivora</i> (Scopoli, 1786)	Mees (1972), Gill <i>et al.</i> (2023)	
<i>Columba viridis</i>	Scopoli (1786b)	New Guinea	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 64, 65 (Fig. 91)		junior synonym	<i>Treron vernans</i> (Linnaeus, 1771)	Walden (1877)	
<i>Columba pileata</i>	Scopoli (1786b)	New Guinea	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 66 (Fig. 92)		junior synonym	<i>Chalcophaps indica</i> (Linnaeus, 1758)	A	
<i>Columba bicolor</i>	Scopoli (1786b)	New Guinea (New Guinea)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 103 (not cited by Scopoli) (Fig. 93)		valid taxon	<i>Ducula bicolor</i> (Scopoli, 1786)	Walden (1877), Blandford (1898), Baker (1930), Gill <i>et al.</i> (2023)	
<i>Columba pulcherrima</i>	Scopoli (1786b)	New Guinea (Seychelles)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 67 (Fig. 94)	syntype (MNHN-ZO-MO-2002-138; Muséum National d'Histoire Naturelle, Paris, France)	valid taxon	<i>Electroenas pulcherrimus</i> (Scopoli, 1786)	Gill <i>et al.</i> (2023)	
<i>Alauda malabarica</i>	Scopoli (1786b)	China (India)	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 113-1 (Fig. 95)		valid taxon	<i>Galerida malabarica</i> (Scopoli, 1786)	Baker (1930a), Gill <i>et al.</i> (2023)	
<i>Alauda grisea</i>	Scopoli (1786b)	China (India)	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 113-2 (Fig. 95)		valid taxon	<i>Eremopterix griseus</i> (Scopoli, 1786)	Baker (1930a), Gill <i>et al.</i> (2023)	
<i>Turdus malacensis</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 110 (Fig. 96)		uncertain			should be examined further: the reference figure suggest one of the Asian Pitta species
<i>Ampelis malabarica</i>	Scopoli (1786b)	China (India)	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 114-1 (Fig. 97)		valid taxon	<i>Copsychus malabaricus</i> (Scopoli, 1786)	Baker (1930a), Gill <i>et al.</i> (2023)	Baker (1930) as well as public taxonomic databases (GIBIF, AVIBASE) wrongly refer to <i>Muscicapa malabarica</i> as protonym of <i>Copsychus malabaricus</i> (Scopoli, 1786); correct protonym is <i>Ampelis malabarica</i> , while <i>Muscicapa malabarica</i> was described as other species
<i>Emberiza signata</i>	Scopoli (1786b)	New Guinea	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 75 (Fig. 98)		uncertain			should be examined further: the reference figure suggest one of the Vidua species, most probably <i>Vidua hypocherina</i> Verreaux & Verreaux, 1856
<i>Tanagra macroura</i>	Scopoli (1786b)	New Guinea	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 74 (Fig. 99)		uncertain			

Scopoli's new species descriptions	Authority	Type localities as cited by Scopoli (in brackets are countries with type localities according to current taxonomic revisions)	Type collections cited by Scopoli	Figure references	Existing or newly designated type specimens	Current taxonomic status	Interpretation	Source of interpretation	Remarks
<i>Motacilla luzonensis</i>	Scopoli (1786b)	Luzon (Philippines)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 29 (Fig. 100)		senior synonym	<i>Motacilla alba leucopsis</i> Gould, 1838	Walden (1877), Oates (1890)	
<i>Muscicapa caeruleocephala</i>	Scopoli (1786b)	Luzon	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 26-1 (Fig. 101)		junior synonym	<i>Hypothymis azurea</i> (Boddaert, 1783)	Baker (1930a)	
<i>Muscicapa macroura</i>	Scopoli (1786b)	New Guinea	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 27-1 (Fig. 102)		uncertain			
<i>Muscicapa tessacourbe</i>	Scopoli (1786b)	New Guinea	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 27-2 (Fig. 102)		uncertain		International Commission on Zoological Nomenclature (1963)	The International Commission on Zoological Nomenclature declared the name as dubious taxon and suppressed it for the purposes of the Law of Priority.
<i>Muscicapa goiavier</i>	Scopoli (1786b)	New Guinea (Philippines)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 28 (Fig. 103)		valid taxon	<i>Pycnonotus goiavier</i> (Scopoli, 1786)	Walden (1877), Baker (1930a), Gill <i>et al.</i> (2023)	
<i>Muscicapa panayensis</i>	Scopoli (1786b)	New Guinea (Philippines)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 73 (Fig. 104)		valid taxon	<i>Aplonis panayensis</i> (Scopoli, 1786)	Walden (1877), Gill <i>et al.</i> (2023)	
<i>Muscicapa malabarica</i>	Scopoli (1786b)	China	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 111 (Fig. 105)		uncertain			should be examined further: wrongly interpreted by Baker (1930) as <i>Copsychus malabaricus</i> (Scopoli, 1786); the reference figure suggests <i>Dicrurus remifer</i> (Temminck, 1823)
<i>Sylvia lutea</i>	Scopoli (1786b)	China (China)	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 114-2 (Fig. 97)		valid taxon	<i>Leiothrix lutea</i> (Scopoli, 1786)	Swinhoe (1871), Baker (1930a), Gill <i>et al.</i> (2023)	
<i>Sylvia capensis</i>	Scopoli (1786b)		Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 115 (Scopoli wrongly cited Pl. 208-1) (Fig. 106)		uncertain			
<i>Parvus nelicourvi</i>	Scopoli (1786b)	China (Madagascar)	Coll. Pierre Sonnerat	Sonnerat 1782, Pl. 112 (Fig. 107)		valid taxon	<i>Ploceus nelicourvi</i> (Scopoli, 1786)	Gill <i>et al.</i> (2023)	
<i>Hirundo gutturalis</i>	Scopoli (1786b)	New Guinea (Philippines)	Coll. Pierre Sonnerat	Sonnerat 1776, Pl. 76 (Fig. 108)		valid taxon	<i>Hirundo rustica gutturalis</i> (Scopoli, 1786)	Swinhoe (1871), Walden (1877), Baker (1930a), Gill <i>et al.</i> (2023)	
<i>Fringilla alpina</i>	Scopoli (1788)	Trentino (Italy)	not specified (probably coll. Scopoli)	Scopoli 1788, Tab. 18 (Fig. 109)		junior synonym	<i>Carduelis citrinella</i> (Pallas, 1764)	Newton (1882)	

OPISI PTIC (AVES) JOANNESA ANTONIUSA SCOPOLIJA (1723-1788):
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POVZETEK

*Joannes Antonius Scopoli (1723-1788), avtor opisov najmanj 175 novih taksonov ptic, od katerih je 59 še vedno veljavnih, je bile eden najpomembnejših tvorcev ornitološke zgodovine v Evropi in na svetu, kljub temu pa je pogosto spregledan, njegova ornitološka zapuščina pa slabo raziskana in poznana. Dopisoval si je z Linnéjem in tako vplival na zgodnji razvoj razvoj sistematike in klasifikacije organizmov. Njegovo najpomembnejšo znanstveno delovanje je bilo med letoma 1754 in 1769 na Kranjskem (današnja Slovenija) in se je odrazilo v številnih publikacijah, ki temeljijo na njegovih izvirnih terenskih raziskavah. Med temi so ornitološke raziskave, objavljene v *Annus I. Historico Naturalis, Descriptiones Avium* (1769), medtem ko so bile kasnejše študije posvečene reviziji podatkov in opisov drugih raziskovalcev, med katerimi so najpomembnejši opisi iz odprav francoskega raziskovalca Pierra Sonnerata. Prispevek predstavlja pregled vseh taksonov ptic, ki jih je opisal Scopoli, kot nove (1) s pregledom interpretacij identitete in trenutnega taksonomskega statusa ter (2) s pregledom zbirk, ki vsebujejo tipske primerke vrst, ki jih je opisal Scopoli, s podatki o njihovem zgodovinskem in trenutnim statusom. Prispevek razkriva nekatere nova zgodovinska in taksonomska dejstva, ki so podlaga za nadaljnje zgodovinske in taksonomske študije ornitoloških prispevkov Joannesa A. Scopolija.*

Ključne besede: zgodovina znanosti, ornitologija, zbirke, taksonomija, tipski primerki, zoološka nomenklatura

REFERENCES

- Albegger, E. (2015):** Interesting old specimens of rare birds found in Slovenia in the collection of the Universalmuseum Joanneum, Graz, Austria. *Acrocephalus*, 36, 173-178.
- Aldrovandi, U. (1637):** Ornithologiae hoc est de avibus historiae. Tomus Alter. Apud Nicolaum Tebeldinum.
- Baker, E.C.S. (1930a):** The Fauna of British India, including Ceylon and Burma. Birds-Vol. VII. 2nd Edit. Taylor and Francis, London.
- Baker, E.C.S. (1930b):** The Fauna of British India, including Ceylon and Burma. Birds-Vol. VIII. Taylor and Francis, London.
- Barbagli, F., F. Barbagli & C. Violani (1997):** Scopoli, Linnaeus and the Wallcreeper *Tichodroma muraria*. Bull. B.O.C., 117, 145-147.
- Beehler, B.M. & T.K. Pratt (2016):** Birds of New Guinea: Distribution, Taxonomy, and Systematics. Princeton University Press, Princeton.
- Belon, P. (1555):** L'histoire de la nature des oyseaux, avec leurs descriptions et naïfs portraits retirez du naturel, escrite en sept livres. Chez Guillaume Cauellat, Paris.
- Berlioz, J. (1950):** L'Histoire des Collections de Mammifères et d'Oiseaux du Muséum. Bulletin du Muséum, 22, 166-180.
- Bezzel, E. & R. Prinzinger (1990):** Ornithologie. 2. Aufl. Ulmer, Stuttgart.
- Birkhead, T. (2008):** The Wisdom of Birds. Bloomsbury, London.
- Blanford, W.T. (1898):** The Fauna of British India, including Ceylon and Burma. Birds-Vol. IV. Taylor and Francis, London.
- Blyth, E. (1845):** Drafts for a Fauna Indica. Journal of the Asiatic Society of Bengal, 168, 845-879.
- Cassin, J. (1852):** Catalogue of the Halcyonidae in the Collection of the Academy of Natural Sciences of Philadelphia. Proceedings of the Academy of Natural Sciences of Philadelphia, Vol. 6. Academy of Natural Sciences.
- Chansigaud, V. (2009):** The History of Ornithology. New Holland Publishers, London.
- Checklist Committee (OSNZ) (2022):** Checklist of the Birds of New Zealand (5th edition). Ornithological Society of New Zealand Occasional Publication No. 1. Ornithological Society of New Zealand, Wellington.
- Cheke, A. (2011):** Sonnerat's shrew – evidence for a new and possibly extinct species in an early 19th century manuscript (Mammalia: Soricidae). Journal of the Bombay Natural History Society, 108, 95-97.
- Clancey, P.A. (1959):** The South African Races of the Brown-Hooded Kingfisher *Halcyon albiventris* (Scopoli). Ostrich, 30, 77-81.
- Dorsi, P. (2022):** Archivio Della Torre e Tasso. Archivio Antico (1281 – Il metà sec. XIX). Archivio si stato di Trieste, Trieste.
- Edwards, G. (1747):** A Natural History of Birds. Part II. College of Physicians in Warwick-Lane, London.
- Finsch, O. (1903):** Ueber einen neuen Nashornvogel der Gattung Penelopides, Reichb. Notes from the Leyden Museum, 23, 190-194.
- Fitzinger, L.J.F.J. (1853):** Versuch einer Geschichte der Menagerien des österreichisch-kaiserlichen Hofes. Sitzungsberichte der Akademie der Wissenschaften mathematisch-naturwissenschaftliche Klasse, 10, 626-710.
- Fitzinger, L.J.F.J. (1856):** Geschichte des Kais. Kön. Hof-Naturalien-Cabinetes zu Wien. Sitzungsberichte der Akademie der Wissenschaften mathematisch-naturwissenschaftliche Klasse, Heft 1/2, 433-479.
- Gebhardt, L. (2006):** Die Ornithologen Mitteleuropas. Aula-Verlag, Wiebelsheim.
- Gill, F., D. Donsker & P. Rasmussen, eds. (2023):** IOC World Bird List (v 13.2). Doi 10.14344/IOC.ML.13.2. <http://www.worldbirdnames.org/>
- Gmelin, J.F. (1788):** Caroli a Linne, Systema Naturae. Tom I. Impensis Georg. Emanuel. Beer., Lipsiae.
- Gregori, J. (2008):** Joannes A. Scopoli, njegovi "Descriptiones avium (1769)" in kranjska imena ptičev. Scopolia, 65, 1-32.
- Hartert, E. (1903):** Die Vögel der paläarktischen Fauna. Band I., Heft 1. Verlag von R. Friedländer und Sohn, Berlin.
- Hartert, E. (1905):** Die Vögel der paläarktischen Fauna. Band I., Heft 3. Verlag von R. Friedländer und Sohn, Berlin.
- Hartert, E. (1912):** Die Vögel der paläarktischen Fauna. Band II., Heft 1. Verlag von R. Friedländer und Sohn, Berlin.
- Hartert, E. (1913):** Die Vögel der paläarktischen Fauna. Band II., Heft 2. Verlag von R. Friedländer und Sohn, Berlin.
- Hartert, E. (1920a):** Die Vögel der paläarktischen Fauna. Band II., Heft 4. Verlag von R. Friedländer und Sohn, Berlin.
- Hartert, E. (1920b):** Die Vögel der paläarktischen Fauna. Band II., Heft 5/6. Verlag von R. Friedländer und Sohn, Berlin.
- Hartert, E. (1921a):** Die Vögel der paläarktischen Fauna. Band II., Heft 7/8. Verlag von R. Friedländer und Sohn, Berlin.
- Hartert, E. (1921b):** Die Vögel der paläarktischen Fauna. Band III., Heft 1. Verlag von R. Friedländer und Sohn, Berlin.
- del Hoyo, J., ed. (2020):** All the Birds of the World. Lynx Edicions, Barcelona.
- del Hoyo, J., Elliott A., Sargatal J., eds. (1992):** Handbook of the Birds of the World. Vol. 1. Lynx Edicions, Barcelona.
- del Hoyo, J., Elliott A., Sargatal J., eds. (1994):** Handbook of the Birds of the World. Vol. 2. Lynx Edicions, Barcelona.

- del Hoyo, J., Elliott A., Sargatal J., eds. (1996):** Handbook of the Birds of the World. Vol. 3. Lynx Edicions, Barcelona.
- del Hoyo, J., Elliott A., Sargatal J., eds. (1997):** Handbook of the Birds of the World. Vol. 4. Lynx Edicions, Barcelona.
- del Hoyo, J., Elliott A., Sargatal J., eds. (1999):** Handbook of the Birds of the World. Vol. 5. Lynx Edicions, Barcelona.
- del Hoyo, J., Elliott A., Sargatal J., eds. (2001):** Handbook of the Birds of the World. Vol. 6. Lynx Edicions, Barcelona.
- del Hoyo, J., Elliott A., Sargatal J., eds. (2002):** Handbook of the Birds of the World. Vol. 7. Lynx Edicions, Barcelona.
- del Hoyo, J., Elliott A., Christie D.A., eds. (2004):** Handbook of the Birds of the World. Vol. 9. Lynx Edicions, Barcelona.
- del Hoyo, J., Elliott A., Christie D.A., eds. (2005):** Handbook of the Birds of the World. Vol. 10. Lynx Edicions, Barcelona.
- del Hoyo, J., Elliott A., Christie D.A., eds. (2007):** Handbook of the Birds of the World. Vol. 12. Lynx Edicions, Barcelona.
- del Hoyo, J., Elliott A., Christie D.A., eds. (2008):** Handbook of the Birds of the World. Vol. 13. Lynx Edicions, Barcelona.
- del Hoyo, J., Elliott A., Christie D.A., eds. (2009):** Handbook of the Birds of the World. Vol. 14. Lynx Edicions, Barcelona.
- Hume, J.P. & M. Walters (2012):** Extinct Birds. T & AD Poyser, London.
- International Commission on Zoological Nomenclature (1963):** Opinion 684. Bulletin of Zoological Nomenclature, 20, 418-420.
- International Commission on Zoological Nomenclature (1999):** International code of zoological nomenclature, 4th ed. The International Trust for Zoological Nomenclature, London.
- Iredale, T. (1954):** A checklist of the Birds of Paradise and Bower-birds. Australian Zoologist, 11, 161-189.
- Jacquin, J. F. (1784):** Beiträge zur Geschichte der Vögel. Christian Friederich Wappler, Wien.
- Jezernik, B. (2009):** Ljubljanske "knjige sveta" od Auerspergov do Hacqueta. Etnolog, 19, 17-35.
- Jonston, J. (1650):** Historiae Naturalis de Auibvs. Libri VI. Matthaei Meriani, Francofurti ad Moenvm.
- Kryštufek, B., M. Naderi, F. Janžekovič, R. Hutterer, D. Bombek & A. Mahmoudi (2021):** A taxonomic revision of fat dormice, genus *Glis* (Rodentia). Mammalia, 85, 362-378.
- Latham, J. (1781):** A General Synopsis of Birds. Vol. 1, Part 1. Benj. White, London.
- Latham, J. (1823):** A General History of Birds. Vol. 8. Jacob and Johnson, Winchester.
- Linnaeus, C. (1758):** Systema Naturae. Tomus I. Editio decima, reformata. Impensis Driect. Laurentii Salvii, Holmiae.
- Linnaeus, C. (1766):** Systema Naturae. Tomus I. Editio duodecima, reformata. Impensis Driect. Laurentii Salvii, Holmiae.
- Madge, S. & P. McGowan (2002):** Pheasants, Partridges and Grouse. Chirstopher Helm, London.
- Mayr, E. & R.A. Paynter (1964):** Check-list of Birds of the World. Vol. X. Museum of Comparative Zoology, Cambridge.
- Mearns, B. & R. Mearns (1998):** The Bird Collectors. Academic Press, San Diego.
- Mees, G.F. (1972):** Die Vögel der Insel Gebe. Zoologische Mededelingen, 46, 69-89.
- Meyer, J.D. (1752):** Vorstellungen alterlen Thierte mit ihren Gerippen. Zweiter Theil. Bieling, Nürnberg.
- Neumann, O. (1900):** Beiträge zur Vogelfauna von Ost- und Central-Afrika. Journal für Ornithologie, 48, 185-313.
- Newton A., ed. (1882):** Scopoli's Ornithological Papers from his Deliciae florae et faunae Insubricae (Ticini: 1786-1788). The Willughby Society, University Press, Cambridge.
- Oates, E.W. (1890):** The Fauna of British India, including Ceylon and Burma. Birds-Vol. II. Taylor and Francis, London.
- Oberholser, H.C. (1918):** Mutanda ornithologica. III. Proc. Biol. Soc. Washington, 31, 47-49.
- Pasfield, O.S. (1892):** Pierre Sonnerat (1745—1814). Gardner's Chronicle, 12, 338.
- Paynter, R.A. & R.W. Storer (1970):** Check-list of Birds of the World. Vol. XIII. Museum of Comparative Zoology, Cambridge.
- von Pelzeln, A. (1890):** Geschichte der Säugethier- und Vogel-Sammlung des k. k. naturhistorischen Hofmuseums. Annalen des Naturhistorischen Museums in Wien, 5, 503-539.
- Pennant, T. (1781):** Genera of Birds. B. White, London.
- Peters, J.L. (1931):** Check-list of Birds of the World. Vol. I. Harvard University Press, Cambridge.
- Peters, J.L. (1948):** Check-list of Birds of the World. Vol. VI. Harvard University Press, Cambridge.
- Petkovšek, V. (1977):** J. A. Scopoli, njegovo življenje in delo v slovenskem prostoru. Slovenska akademija znanosti in umetnosti, Ljubljana.
- Piltaver, A. (2023):** Scopoli and Fungi. In: Bavcon, J. & B. Ravnjak (eds.): Ioannes Antonius Scopoli a polymath in Land of Carniola. University Botanic Gardens, University of Ljubljana, Ljubljana, pp. 210-239.
- Pittie, A. & E.C. Dickinson (2010):** Authorship of new names proposed in papers by Whistler & Kinnear, entitled 'The Vernay Scientific Survey of the Eastern Ghats (Ornithological section)', during 1930–1937. Indian Birds, 6, 158-161.
- Ponebšek, J. (1917):** Naše ujede, I. del: Sove. Muzejsko društvo za Kranjsko, Ljubljana.
- Praprotnik, N. (2015):** Botaniki, njihovo delo in herbarijske zbirke praprotnic in semen v Prirodoslovnem muzeju Slovenije. Scopolia, 83/84, 1-414.

- Rey, E. (1872):** *Synonymik der Europäischen Brutvögel und Gäste*. G. Schwetschke'scher Verlag, Halle.
- Salvadori, T. (1891):** *Catalogue of the Psittaci, or Parrots, in the Collection of the British Museum. Catalogue of the Birds in the British Museum, Vol. XX. Order of the Trustees, London.*
- Santon, V. (2011):** *Al servizio degli Asburgo: carriere, famiglie e proprietà di nobili Friulani in Austria tra seicento e settecento*. Università degli studi di Trieste, Trieste.
- Sharpe, R.B. (1868-71):** *A Monograph of the Alcedinidae: or, Family of Kingfishers*. J.W. Elliot, London.
- Sherborn, C.D. (1902):** *Index Animalium*. C. J. Clay and Sons, Cambridge University Press Warehouse, London.
- Schiebel, G. (1919):** *Geographische Irrtümer betreffs Scopoli in Harterts "Vögel der palaearktischen Fauna"*. *Ornithologische Monatsberichte*, 27, 69-72.
- Sclater, W.L. (1903):** *The Birds of South Africa*. Vol. III. R. H. Porter, London.
- Scopoli, J.A. (1760):** *Flora Carniolica: exhibens plantas Carniolae indigenas et distributas in classes naturales cum differentiis specificis, synonymis recentiorum, locis natalibus, nominibus incolarum, observationibus selectis, viribus medicis*. Joannis Thomae Trattner, Viennae.
- Scopoli, J.A. (1763):** *Entomologia Carniolica exhibens insecta Carnioliae indigena et distributa in ordines, genera, species, variatates. Methodo Linnaeana*. Joannis Thomae Trattner, Vindobonae.
- Scopoli, J.A. (1769):** *Annus I. Historico-Naturalis. Descriptiones Avium*. Sumtib. Christ. Gottlob Hilscheri, Lipsiae.
- Scopoli, J.A. (1770):** *Bemerkungen aus der Natur-Geschichte, Erstes Jahr, welches Die Vögel seines Eigenen Cabinets und zugleich einige seltene, die er in dem Kaiserl. Thiergarten und in der Sammlung des Hrn. Grafen Franz Hannibal von Thurn gesehen, beschrieben, aus dem Lateinschen übersetzt und mit einigen Anmerkungen versehen von D. Friederich Christian Günther*. Christian Gottlob Hitscher, Leipzig.
- Scopoli, J.A. (1772):** *Flora Carniolica: exhibens plantas Carniolae indigenas et distributas in classes naturales cum differentiis specificis, synonymis recentiorum, locis natalibus, nominibus incolarum, observationibus selectis, viribus medicis*. Joannis Thomae Trattner, Viennae.
- Scopoli, J.A. (1777):** *Introductio ad historiam naturalem sistens genera lapidum, plantarum at animalium*. Gerle, Pragae.
- Scopoli, J.A. (1786a):** *Deliciae florum et faunae Insubricae. Pars I. Typographia Reg. & Imp. Monasterii S. Salvatoris, Ticini.*
- Scopoli, J.A. (1786b):** *Deliciae florum et faunae Insubricae. Pars II. Typographia Reg. & Imp. Monasterii S. Salvatoris, Ticini.*
- Scopoli, J.A. (1788):** *Deliciae florum et faunae Insubricae. Pars III. Typographia Reg. & Imp. Monasterii S. Salvatoris, Ticini.*
- Silva, P.C. (1993):** *Two Proposals to Incorporate the Term "Iconotype" in the Code*. *Taxon*, 42, 165-166.
- Soban, D. (2004):** *Joannes A. Scopoli - Carl Linnaeus. Correspondence 1760-1775*. Proteusova knjižnica, Slovenian Natural History Society, Ljubljana.
- Sonnerat, P. (1776):** *Voyage a la Nouvelle Guinée*. Ruault, Paris.
- Sonnerat, P. (1782):** *Voyage aux Indes orientales et a la Chine. Tome III. Vol.1-2*. Chez Froulié, Nyon.
- Stark, A. (1903):** *The Birds of South Africa*. Vol. III. R. H. Porter, London.
- Stark, A. (1906):** *The Birds of South Africa*. Vol. IV. R. H. Porter, London.
- Steinberg, F.A. (1758):** *Gründliche Nachricht von dem in dem Inner-Crain liegenden Czirknizer See*. Anna Elisabetha Reichhardt, Wittib, Laibach.
- Steinheimer, F.D. (2005):** *The whereabouts of pre-nineteenth century bird specimens*. *Zool. Med. Leiden*, 79-3, 45-67.
- Stresemann, E. (1923):** *Die Anfänge ornithologischer Sammlungen*. *Journal of Ornithology*, 71, 112-127.
- Stresemann, E. (1952):** *On the birds collected by Pierre Poivre in Canton, Manila, India and Madagascar (1751-1756)*. *Ibis*, 94, 499-523.
- Swinhoe, R. (1871):** *Catalogue of the Birds of China*. *Proceedings of the Zoological Society of London*, London.
- Trust for Avian Systematics (2021):** *H&M4 Checklist family by family*. <https://www.aviansystematics.org/checklist> (accessed 25 November 2023)
- Vaurie, C. (1959):** *The Birds of Palearctic Fauna*. A systematic reference: order Passeriformes. H.F. & G. Witherby Limited, London.
- Vaurie, C. (1965):** *The Birds of Palearctic Fauna*. A systematic reference: Non-Passeriformes. H.F. & G. Witherby Limited, London.
- Violani, C. & C. Rovati (2010):** *The bird collections of the Natural History Museum, University of Pavia, Italy: a historical outline*. In: Bauernfeind E., Gamauf A., Berg H.M., Muraoka Y. (eds.): *Collections in Context. Proc. 5th Int. Meet. Europ. Bird Curators*. *Nat. Hist. Mus. Vienna*, Vienna, pp. 13-25.
- Voisin, C. & J.F. Voisin (2008):** *Liste des types d'oiseaux des collections du Muséum national d'Histoire naturelle de Paris*. 16: *Perroquets (Psittacidae)*. *Zoosystema*, 30, 463-499.
- Voisin, C. & J.F. Voisin (2010):** *List of type specimens of birds in the collections of the Muséum national d'Histoire naturelle (Paris, France)*. 20. *Piciformes (Part 2: Picidae)*. *Journal of the National Museum (Prague), Natural History Series*, 179, 7-26.

Voisin, C., J.F. Voisin, C. Jouanin & R. Bour (2004): Liste des types d'oiseaux des collections du Muséum national d'Histoire naturelle de Paris. 13: Gangas et Pigeons (Pteroclididae et Columbidae), première partie. *Zoosystema*, 26, 107-128.

Voss, W. (1881): Ioannes Antonius Scopoli. Lebensbild eines österreichischen Naturforschers und dessen Kenntnisse der Pilze Krains. Separatabdruck aus den Verhandlungen der k.k. zoologisch- botanischen Gesellschaft in Wien.

Vrezec, A. (2009): Melanism and plumage variation in *macroura* Ural Owl. *Dutch Birding*, 31, 159-170.

Vrezec, A. (2023): The zoological work of Giovanni Antonio Scopoli: taxonomy, Slovenian nomenclature and faunistics. In: Bavcon, J. & B. Ravnjak (ed.): Ioannes Antonius Scopoli a polymath in Land of Carniola. University Botanic Gardens, University of Ljubljana, Ljubljana, pp. 258-328.

Vrezec, A., J. Smole & P. Vrh Vrezec (2007): Descriptions of European owl species by Scopoli (1769): a problem of overlooked European owl names? no. 127 In: De Jong J., Bloem H., Duncan J.R., Johnson D.H., Leigh R.S., Van Nieuwenhuyse D., Van Den Burg A.B., eds.: World Owl Conference. Program Book. Gorenge, Netherlands.

Vrezec, A., Š. Ambrožič, A. Kobler, A. Kapla & M. de Groot (2017): *Cucujus cinnaberinus* (Scopoli, 1763) at its terra typica in Slovenia: historical overview, distribution patterns and habitat selection. *Nature Conservation*, 19, 191-217.

Walden, A.V. (1877): A List of the Birds known to inhabit the Philippine Archipelago. *Transactions of the Zoological Society of London*, 9, 125-252.

Wallin, L. (2001): Catalogue of type specimens. 4. Linnaean specimens. Uppsala University, Museum of Evolution, Zoology section, Uppsala.

Walters, M. (2003): A Concise History of Ornithology. Yale University Press, New Haven, London.

Willughby, F. (1676): Ornithologiae. Regiae Societatis Typographi, Londini.

Winkler, H., D.A. Christie & D. Nurney (1995): Woodpeckers. A Guide to the woodpeckers, piculets and wrynecks of the World. Pica Press, Sussex.

Zander, H.D.F. (1854): Ueber die europäischen Pieper. *Naumannia*, 4, 1-24.