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## On the nomenclature of wild and domestic Streptopelia doves

by Thomas M. Donegan 🕩

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Summary.—Two competing names exist at species level for the Barbary Dove, Ringed Turtle-Dove or African Collared Dove: Streptopelia risoria Linnaeus, 1758, based on a domestic neotype, and S. roseogrisea Sundevall, 1857, on an ancestral wild African Collared Dove neotype. Van Grouw et al. (2023) confirmed that Barbary Dove is descended from African Collared Dove and that they are conspecifics, albeit rather different genetically; they proposed recognising a monotypic S. risoria for all populations. However, their taxonomy was rooted in the assumption that S. risoria pertains to wild African Collared Doves, domestics being referred to as 'S. risoria domestica', a nomen nudum. I argue here that the outcome of ICZN (2008) and van Grouw et al. is instead that the senior name risoria applies at species rank for wild and domestic birds, but as a subspecies name solely to domesticates and introduced populations. It must be considered whether ancestral populations in Africa and the Middle East are sufficiently different from domesticates for subspecies roseogrisea and arabica to be recognised, which is the status quo and has some support in morphological and molecular data. This situation, where a domestic name is senior to one for phenotypically different wild populations is apparently unique in the animal kingdom. In a close vote, ICZN (2008) declined to give priority to the wild name S. roseogrisea, but some Commissioners were open to review the situation. The inconsistency between ICZN (2008) and ICZN (2003) and the disruption that the former implies to the previously uncontested name for wild populations, S. roseogrisea, appears to have led to widespread continuing recognition of S. roseogrisea at species rank and van Grouw et al.'s 'S. risoria domestica', neither of which is Code compliant. A new ICZN proposal should therefore be considered.

Untangling the nomenclatural issues raised by the wild and domestic populations of Streptopelia doves has proven challenging, with two neotype designations (Donegan 2008, van Grouw 2018), an ICZN case (Donegan 2007, ICZN 2008; see Donegan 2019) and now a molecular study (van Grouw et al. 2023), but still no definitive resolution.

The senior name S. risoria Linnaeus, 1758, was originally described based on domesticates, which are today usually referred to as Barbary Dove or Ringed Turtle-Dove. These are widely considered to be derived from a wild North African and Arabian species that is usually referred to as African Collared Dove S. roseogrisea Sundevall, 1857, with subspecies arabica Neumann, 1904, frequently recognised for eastern populations. Because the type series of S. risoria was mixed, at least including individuals of differing morphologies and possibly different species, a neotype was designated—a paler old specimen of domestic origin (Donegan 2008). The senior name for wild populations of the ancestral African Collared Dove, S. roseogrisea, also had a mixed type series. A neotype was designated from Eritrea (van Grouw 2018). Sequencing of both types by a recent molecular study (van Grouw et al. 2023) found them consistent with other historic samples of domestic



ISSN-2513-9894 (Online) Barbary Doves and African Collared Doves, respectively. As a result, the two names are thought to be suitably anchored in terms of their type specimens.

The ICZN was asked (Donegan 2007, ICZN 2008) to apply the same principle to Streptopelia as it had to 17 mammal and fish species which include distinctive, named domestic breeds. In ICZN (2003), priority was afforded to numerous junior names for wild animals, where senior names were based on domesticates. The same approach was applied to Columba pigeons (ICZN 2018), conserving Columba livia J. F. Gmelin, 1789, over Columba domestica Linnaeus, 1758 (and other competing names based on particular domestic breeds). However, ICZN (2008) declined to give priority to S. roseogrisea in a close vote (see Donegan 2019).

Despite S. risoria and S. roseogrisea generally being considered conspecific (e.g. Donegan 2007; confirmed by van Grouw et al. 2023) with the former having been given priority (ICZN 2008), many ornithologists have continued to use S. roseogrisea (e.g. Dickinson & Remsen 2013, Clements et al. 2023). This is perhaps because the main Commissioner commentary in ICZN (2008) incorrectly stated that S. risoria and S. roseogrisea might not be conspecific, which was used by Dickinson & Remsen (2013), del Hoyo & Collar (2014) and others to justify not changing the name of S. roseogrisea for African Collared Dove. Establishment of neotypes by Donegan (2008) and van Grouw (2018) addressed some of the ICZN's other concerns. These neotypes do not follow ICZN's (2008) strange suggestion to make the two names objective synonyms via designation of the same neotype, since so doing would have infringed Arts. 73.3.5 and 73.3.6 of the Code which require 'evidence that the neotype is consistent with what is known of the former name-bearing type from the original description' and 'evidence that the neotype came as nearly as practicable from the original type locality ... and, where relevant, from the same geological horizon or host species as the original name-bearing type', respectively.

Van Grouw et al. (2023) have now published a molecular study confirming the history of domestication of Barbary Doves. They dealt impressively with taxonomic matters and the ancestry of domestic Streptopelia populations, but their proposals for nomenclature seem misplaced. My purpose here is to set out a revised taxonomy and nomenclature for these birds and to draw attention to the desirability of the ICZN reconsidering its 2008 decision.

## Names and taxonomy for wild and domestic Streptopelia

In van Grouw et al.'s (2023) molecular study, 'three groups' were identified, as (i) the Eurasian Collared Dove S. decaocto, (ii) 'domesticated Barbary Doves (S. r. domestica [sic])'; and (iii) 'both putative subspecies of African Collared Dove (S. r. risoria [sic] and S. r. arabica)'. Their main taxonomic conclusions were that the named wild subspecies of African Collared Dove are closely related to each other and are subjective synonyms; and that domestics, whilst descended from African Collared Dove, are genetically differentiated, with some introgression of Eurasian Collared Dove alleles over time. Since this introgression has been relatively minor overall, it does not prevent African Collared Dove and Barbary Dove being considered conspecific.

Any nomenclatural scheme for these Streptopelia must start with the senior name S. risoria Linnaeus, 1758, and recognise its universal usage for domestics and its neotype as a bird of domestic origin. Unfortunately, van Grouw et al.'s (2023) nomenclature operated in reverse, with the name S. risoria as a starting point for wild populations. They referred to wild African Collared Dove as 'nominate risoria (former roseogrisea)' on p. 156, worded the legend accompanying a photograph of the neotype of roseogrisea as 'Adult male African Collared Dove Streptopelia risoria' and then on p. 157 asked 'are the two currently recognised subspecies of African Collared Dove, risoria and arabica, genetically distinct or not?'. The



authors then introduced the trinomial 'S. r. domestica'—an apparent nomen nudum—for domestics, repeated a dozen times in their fig. 12A and used to denote domestics in the phylogeny in their fig. 7B, as well as being mentioned in the results, other figure legends, appendix and supplementary materials. In correspondence, I was informed that 'domestica' was deployed to distinguish domesticated from wild samples (H. van Grouw in litt. 2023) but, as risoria is based on domestics and roseogrisea on wild birds, introduction of this name was unnecessary and confusing.

The name 'Streptopelia domestica' does not seem to have been formally described (it does not appear in Sherborn 1922 or Richmond 1992), although it has been used several times, e.g., as: Streptopelia risoria var. domestica (Stagni et al. 1976, Brichetti & Gargioni 2005: 71); Streptopelia roseogrisea var. domestica (von Detlef 2000: 150, Andreotti et al. 2001: 146, pl. 8, who considered *S. risoria* a junior synonym of that name); *Streptopelia roseogrisea f. domestica* (Mey 1992: 22, Baumgart 2001: 668); and Streptopelia roseogrisea domestica (van Grouw 2008: 12). All these usages appear to be *nomina nuda*. If not, they would be junior synonyms of *S*. risoria Linnaeus, 1758, and other names that have been previously established for domestic breeds in the genus, such as S. alba (Temminck, 1808).

Van Grouw et al. (2023) concluded that S. risoria can be treated as monotypic, which is a potential and convenient solution. It would also be consistent with taxonomies for some animals that have been domesticated or held in captivity for relatively short periods of time, so that they have not been recognised as phenotypically distinct, such as Common Quail Coturnix coturnix. However, lumping risoria and roseogrisea at subspecies level seems taxonomically unsupportable, for several reasons:

- Such a proposal would contradict the status quo in ornithology, of two centuries of recognition of the name risoria for a morphologically distinct domesticated population descended from African Collared Dove S. roseogrisea (often as a species, not a subspecies). In any taxonomic study, we start with the current sequence and consider whether a change is required.
- Synonymy of risoria and roseogrisea sits most uneasily with the van Grouw et al. molecular study, in which three distinct clusters for Eurasian Collared Dove, African Collared Dove and domestics were recovered (their fig. 6). A distinct clade for domestics appears in their phylogenetic tree (their fig. 7A).
- 3. Introduced populations in the Americas (Barbary Doves) would share the same subspecies name as wild African Collared Doves, potentially inconsistent with '75%' or similar subspecies concepts (e.g., Amadon 1949, Patten & Unitt 2022), as many individuals of introduced populations can be differentiated from wild birds by plumage.
- It would be inconsistent with widespread usage of trinominals for other distinctive domestic animal populations. 'Columba livia domestica', 'Anas platyrhynchos domestica' and 'Anser anser domesticus' are not widely used names in mainstream ornithological literature, but possess 5,320, 867 and 1,180 unique hits in Google Scholar, mostly in the periodical literature for biological or biomedical studies using captive birds.
- Van Grouw et al. also suggested that the widely recognised eastern subspecies arabica is not taxonomically valid. This is a relatively weakly defined subspecies, so this is plausible. Their proposal was based largely on genetics, see their fig. 6, where arabica clustered close to, but nevertheless separate from, roseogrisea. There is little information on how shallow or deep the differentiation is between them, nor any indication if the morphological traits previously used to diagnose them are supported.



Any attempt at a new taxonomy (assuming no ICZN intervention and recognising both risoria and roseogrisea taxonomically as subspecies) cannot start with risoria as the name for wild birds, as van Grouw et al. (2023) supposed, but with the name applicable to domestic populations. Van Grouw et al. (2023) noted changes in the genetics of domestic populations over time, raising questions as to whether today's domesticates are the same as the 1758 concept of risoria. However, since that name has a neotype, which was screened by van Grouw et al. (2023), that is no longer entirely relevant. The situation obviously requires monitoring and it may become necessary to have recourse to taxonomic methods used in palaeontology. In the Canary Islands and many parts of the Americas where Barbary Doves were previously introduced and became resident, Eurasian Collared Dove has subsequently expanded and is becoming dominant, with some insertion of Barbary Dove genes due to hybridisation (van Grouw 2022). On some Caribbean islands, these Eurasian Collared Dove populations exist alongside legacy Barbary Dove populations, increasingly intergrading and presenting taxonomic challenges not addressed here. In places, it is still possible to identify Barbary Doves in both domestication and the wild; many countries include S. risoria or S. roseogrisea in their national checklists as an introduced species (e.g. Chesser et al. 2023). The taxonomies below address such cases.

Subject to those qualifications, the correct sequence for these birds sans ICZN intervention is as follows:

Streptopelia risoria (Linnaeus, 1758). Domestic and introduced Barbary Doves descended from African Collared Dove. Synonym S. alba (Temminck, 1808). 'S. domestica' (as used in various combinations with risoria or roseogrisea, by the authors mentioned above) nom. nuda.

-S. risoria roseogrisea (Sundevall, 1857) African Collared Dove. Possible synonym S. risoria arabica (Neumann, 1904). Synonym: S. risoria bornuensis Bannerman, 1931.

Relevant citations and taxa would then vary depending upon scope of the publication:

- Publications that include names of wild subspecies but do not include named domestic or introduced populations (e.g., Dickinson & Remsen field guides to African or Middle Eastern birds but not the Canary Islands): Streptopelia risoria (Linnaeus, 1758). African Collared Dove. Subspecies roseogrisea (Sundevall, 1857) for wild populations (and arabica (Neumann, 1904), if recognised).
- 2. Publications including both wild and introduced or escaped populations (e.g. eBird
  - Streptopelia risoria (Linnaeus, 1758). African Collared Dove.
  - -S. r. risoria: introduced/escaped, e.g., in the Americas, Caribbean, Canary Islands and elsewhere;
  - -S. r. roseogrisea (Sundevall, 1857): wild populations (and S. r. arabica (Neumann, 1904), if recognised).
- Publications addressing only introduced or escaped populations, e.g., in the Americas or Canary Islands (e.g. Chesser et al. 2023): Streptopelia risoria (Linnaeus, 1758). Barbary Dove or Ringed Turtle-Dove. Nominate subspecies.

### Priority of names based on domestic and wild birds-should ICZN (2008) be reconsidered?

Streptopelia presents a unique case in the animal kingdom, in that it is apparently the only example of a species whose senior name is based upon a distinctive domestic

form, with phenotypically and genotypically distinct wild relatives that have historically borne a different name junior to the name for domestics. This has led to confusion and the proliferation of non-Code compliant or taxonomically incorrect arrangements even by experts, such as the widespread recognition of S. roseogrisea as a valid species name (e.g., Dickinson & Remsen 2013, Clements et al. 2023) and van Grouw et al.'s (2023) 'S. risoria domestica'. Of course, the status quo in ornithology is for S. roseogrisea to be recognised as a wild species (Donegan 2007) and impossible but more intuitive combinations (that would be correct if ICZN 2003 had been extended to these birds) such as 'S. roseogrisea risoria' remain commonplace in important publications and websites (e.g. Svensson et al. 1999, iNaturalist 2024), perhaps reflecting a reluctance to change long-standing usage, despite the ICZN (2008) opinion.

Use of 'domestica' for these doves in van Grouw et al. (2023) and elsewhere may be based on incorrect assumptions about names for domestic forms in birds or widely used but non-Code compliant arrangements prevalent prior to ICZN (2003, 2018). As regards assumptions about names for domesticates, notably most distinctive, named domestic populations take the adjectival name, 'domesticus/a', e.g. the chicken Gallus gallus domesticus Linnaeus 1758, domestic ducks Anas platyrhynchos domesticus Brünnich, 1764, domestic geese Anser anser domesticus Garsault, 1764, and Society Finch Lonchura striata domestica Flower, 1906. This is perhaps coincidence but it is not universal. The oldest names for distinct breeds of Swan Goose Anser cygnoides Linnaeus, 1758, are A. c. australis Linnaeus, 1758, and A. c. orientalis Linnaeus, 1758. In mammals, non-'domestica/us' names for domesticated populations are more commonplace. For example, the dog Canis (lupus) familiaris Linnaeus, 1758 is descended from the wolf Canis lupus Linnaeus, 1758. Other names for distinctive domesticates are listed in ICZN (2003). As regards alternative schemes, some authors have previously proposed that the rule of priority be suspended in general for names based on domesticated animals (Bohlken 1961) or that 'dom.' or '(domestic)' be a universal adjunct (see Groves 1971, Gentry et al. 2004). Some of these non-Code-compliant arrangements gained limited traction prior to ICZN (2003) and in birds might have influenced combinations involving 'Streptopelia domestica'. However, the Commission instead introduced resolutions addressing specific priority issues for mammals, fish and a bird in ICZN (2003, 2018).

The close original vote at ICZN, developments since 2008 (i.e. neotype designations and the van Grouw et al. molecular study) and the undesirable exception from universality that these Streptopelia present suggest that the situation might best be reconsidered by the ICZN. Any new case (reversing ICZN 2008) would need to be based on preserving stability, rather than citing the precedent of previous ICZN Opinions. Whilst the Code itself eschews the concept of precedent (e.g. Art. 85), universality is also an important principle therein and rationality (including the notion of a decision-making body reaching similar decisions in the face of similar facts) is however also important (Donegan 2019). The continuing development and use of non-Code compliant taxonomies (see above) and impossible concepts from a priority perspective (e.g. Streptopelia roseogrisea [domestic type] in Clements et al. 2023 and eBird 2023) suggest that the current situation is resulting in confusion and instability. This paper provides a new taxonomic framework consistent with applicable ICZN Opinions. However, ICZN (2008) is based upon a flawed rationale (Donegan 2019), so authors may reasonably wish to maintain current usage if there is support for reconsidering that decision.

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#### References:

- Amadon, D. 1949. The seventy-five per cent rule for subspecies. Condor 51: 250-258.
- Andreotti, A., Baccetti, N., Perfetti, A., Besa, M., Genovesi, P. & Guberti, V. 2001. *Mammiferi ed Uccelli esotici in Italia: analisi del fenomeno, impatto sulla biodiversità e linee guida gestionali*. Ministerio dell'Ambiente & Istituto Nazionale per la Fauna Selvatica, Rome.
- Baumgart, V. W. 2001. Betrachtungen zur Türkentauben-Frage (Streptopelia decaocto). Mitt. Ver. Sächs. Orn. 8: 667–682.
- Bohlken, H. 1961. Haustiere und zoologische Systematik. Z. f. Tierzüchtung und Züchtungsbiologie 76: 107–113. Brichetti, P. & Gargioni, A. 2005. Atlante degli uccelli nidificanti nella "bassa" pianura lombarda (Italia settentrionale). Ann. Mus. Civ. Sc. Nat. Brescia 34: 67–146.
- Chesser, R. T., Billerman, S. M., Burns, K. J., Cicero, C., Dunn, J. L., Hernández-Baños, B. E., Jiménez, R. A., Kratter, A. W., Mason, N. A., Rasmussen, P. C., Remsen, J. V. & Winker, K. 2023. Check-list of North American birds (online). https://checklist.americanornithology.org/taxa/.
- Clements, J. F., Rasmussen, P. C., Schulenberg, T. S., Iliff, M. J., Fredericks, T. A., Gerbracht, J. A., Lepage, D., Spencer, A., Billerman, S. M., Sullivan, B. L. & Wood, C. L. 2023. The eBird/Clements checklist of birds of the world: v2023. https://www.birds.cornell.edu/clementschecklist/download/.
- von Detlef, R. 2000. Die Tuerkentaube *Streptopelia decaocto* auf den Kanarischen Inseln. *Orn. Jber. Mus. Heineanum* 18: 149–157.
- Dickinson, E. C. & Remsen, J. V. (eds.) 2013. *The Howard and Moore complete checklist of the birds of the world,* vol. 1. Fourth edn. Aves Press, Eastbourne.
- Donegan, T. M. 2007. Case 3380, Columba roseogrisea Sundevall, 1857 (currently Streptopelia roseogrisea; Aves, Columbidae): proposed conservation. Bull. Zool. Nomencl. 64: 108–112.
- Donegan, T. M. 2008. Designation of a neotype for the dove known as 'Streptopelia risoria'. Bull. Brit. Orn. Cl. 128: 138–140.
- Donegan, T. M. 2019. On the Barbary Dove *Streptopelia risoria* and its wild ancestor the African Collared Dove: a critique of Opinion 2215 (Case 3380) of the International Commission on Zoological Nomenclature (2008). doi: 10.13140/RG.2.2.35701.01766 (accessed 14 April 2023).
- eBird. 2023. eBird: an online database of bird distribution and abundance. Cornell Lab of Ornithology, Ithaca, NY. http://www.eBird.org (accessed 18 May 2023).
- Gentry, A., Clutton-Brock, J. & Groves, C. P. 2004. The naming of wild animal species and their domestic derivates. *J. Archaeol. Sci.* 31: 645–651.
- van Grouw, H. 2008. De Lachduif. Published by the author, Voorschoten.
- van Grouw, H. 2018. Streptopelia risoria and how Linnaeus had the last laugh. Bull. Brit. Orn. Cl. 138: 11-29.
- van Grouw, H. 2022. The colourful journey of the Eurasian Collared Dove *Streptopelia decaocto. Bull. Brit. Orn. Cl.* 142: 164–189.
- van Grouw, H., Hernández-Alonso, G., Cavill, E. & Gilbert, T. P. 2023. The Founding Feathers: the true ancestry of the domestic Barbary Dove. *Bull. Brit. Orn. Cl.* 143: 153–171.
- Groves, C. P. 1971. Request for a declaration modifying Article 1 so as to exclude names proposed for domestic animals from zoological nomenclature. *Bull. Zool. Nomencl.* 27: 269–272.
- del Hoyo, J. & Collar, N. J. 2014. *HBW and BirdLife International illustrated checklist of the birds of the world*, vol. 1. Lynx Edicions, Barcelona.
- ICZN (International Commission on Zoological Nomenclature). 2003. Opinion 2027 (Case 3010), Usage of 17 specific names based on wild species which are pre-dated by or contemporary with those based on domestic animals (Lepidoptera, Osteichthyes, Mammalia): conserved. *Bull. Zool. Nomencl.* 60: 81–84.
- ICZN (International Commission on Zoological Nomenclature). 2008. Opinion 2215 (Case 3380), *Streptopelia risoria* (Linnaeus, 1758) (Aves, Columbidae): priority maintained. *Bull. Zool. Nomencl.* 65: 327–328.
- ICZN (International Commission on Zoological Nomenclature). 2018. Opinion 2424 (Case 3692) Columba domestica livia Gmelin, 1789 and Columba oenas domestica Linnaeus, 1758 (Aves, Columbidae): specific and subspecific names conserved for Columba livia and Columba livia domestica. Bull. Zool. Nomencl. 75: 282–284.
- iNaturalist. 2024. Barbary Dove *Streptopelia roseogrisea var. risoria*. https://uk.inaturalist.org/taxa/424575-Streptopelia-roseogrisea-risoria (accessed 16 January 2024).
- Mey, E. 1992. Anzeiger des Vereins Thuringer Ornithologen. Verein Thüringer Ornithologen, Erfurt.
- Patten, M. A. & Unitt, P. 2002. Diagnosability versus mean differences of Sage Sparrows subspecies. *Auk* 119: 26–35
- Richmond, C. W. (ed.) 1992. The Richmond index to genera and species of birds. G. K. Hall & Co., Boston, MA.
- Sherborn, C. D. 1922. Index animalium sive index nominum quae ab A.D. MDCCLVIII generibus et speciebus animalium imposita sunt, pt. 1. Trustees of the Brit. Mus., London.
- Stagni, A., Zaccanti, F. & Innocenti, G. 1976. Precoci aspetti della gonadogenesi nel columbiforme *Streptopelia* risoria var. domestica. Atti Accad Sci. Ist. Bologna Classe Sci. Fis. Rend. 4: 71–77.
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