# Gender agreement of avian species-group names under Article 31.2.2 of the ICZN Code

# by Normand David & Michel Gosselin

### Received 23 September 2010

SUMMARY.— The present article examines the nature of several species-group names that are grammatically nouns as well as adjectives, as covered by Art. 31.2.2 of the ICZN (1999) Code. We looked at 139 avian species-group names, 69 of which proved to be nouns and 70 adjectives. Of these 139 names, 18 would need to be corrected in the reference list that we followed (Dickinson 2003). They are: *Leptoptilos crumenifer* (adjective), *Threskiornis moluccus* (adjective), *Aramides cajaneus* (adjective), *Porphyrio martinicus* (adjective), *Turnix sylvaticus lepurana* (noun), *Ducula aenea vicinus* (noun), *Amazona mercenarius* (noun), *Otus choliba cruciger* (adjective), *Aegotheles bennettii plumifer* (adjective), *Pogoniulus coryphaea* (noun), *Schiffornis turdina amazonum* (noun), *Frederickena unduliger* (noun), *Premnornis guttuliger* (adjective), *Monarcha vidua* (noun), *Calyptocichla serinus* (noun), *Turdus libonyana* (noun), *Erythrura trichroa sigillifer* (noun) and *Thraupis episcopus nesophila* (adjective).

In an earlier assessment of the gender agreement of avian species names (David & Gosselin 2002a), we pointed out that scientific names that are grammatically nouns as well as adjectives are covered by Art. 31.2.2 of the ICZN (1999) Code and must be evaluated on an *ad hoc* basis. Here we review avian names that fall in that category.

Art. 31.2.2 (ICZN 1999) and its accompanying example state:

'Where the author of a species-group name did not indicate whether he or she regarded it as a noun or as an adjective, and where it may be regarded as either and the evidence of usage is not decisive, it is to be treated as a noun in apposition to the name of its genus (the original spelling is to be retained, with gender ending unchanged; see Article 34.2.1).

Example. Species-group names ending in *\_fer* and *\_ger* may be either nouns in apposition, or adjectives in the masculine gender. *Cephenemyia phobifer* (Clark) has often been used as *C. phobifera*, but the original binomen was *Oestrus phobifer*; since *Oestrus* is masculine, *phobifer* in that binomen may be either a masculine adjective or a noun in apposition; hence it is to be treated as a noun in apposition and not changed when combined with the feminine generic name *Cephenemyia.'* 

Therefore, a species-group name must be treated as a noun in apposition when the three following conditions are *all* met: (1) where the author did not indicate whether he or she regarded it as a noun or as an adjective; (2) where the name may be regarded as a noun as well as an adjective; and (3) where there is no decisive evidence of usage as an adjective.

(1) An author 'indicates' how he regards a name when he 'makes it known or shows (more or less distinctly)' (Little *et al.* 1973). An indication may be a formal statement specifying that the name is a noun or an adjective, or any sort of relevant information. In other words, one must determine if the original work contains an indication that provides a conclusion.

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- (2) Many classical Latin words are formed from the verbs *ferre* [to carry] or *gerere* [to bear]: some are nouns (*crucifer, furcifer,* etc.), most are adjectives (*armifer, ensifer, criniger, flammiger, plumiger, squamiger,* etc.), and a few (*armiger, lucifer,* etc.) may be nouns or adjectives (Glare 1982). In the example quoted above, a newly derived word, such as *phobifer,* should be regarded as a noun or an adjective.
- (3) The word 'usage' has different meanings: 'established practice' and 'action of using' are two of them (Little *et al.* 1973). It must be emphasised that Art. 31.2.2 avoids the term 'prevailing usage', which is defined in the ICZN (1999) glossary, where it applies to subsequent spellings other than mandatory changes to the gender endings of names (see Arts. 33 and 34). The French text of Art. 31.2.2 (which is equivalent in force, meaning, and authority—Art. 86.2) is structured differently than the English one, and helps interpreting the meaning of 'evidence of usage'. It states: 'Si une épithète peut être considérée indifféremment comme un substantif ou comme un adjectif, sans que l'usage qui en est fait ne permette de conclure, et si son auteur n'a pas tranché la question, elle doit être traitée comme un substantif en apposition.' A direct translation into English gives: 'If an epithet may be considered indifferently as a noun or as an adjective, without the use that it is put to permitting a conclusion, and if its author did not settle the matter, it must be treated as a noun in apposition.'

The phrase 'sans que l'usage qui en est fait ne permette de conclure / without the use that it is put to permitting a conclusion' makes clear that 'usage' relates first of all to use by the author in the original publication. So the word 'decisive', in the English text, means conclusive, and the noun vs. adjective status must be determined from the original publication, not from random subsequent use. The example included under Art. 31.2.2 states clearly that *phobifer* (a newly derived Latin word) in the original combination *Oestrus phobifer*, where the genus is masculine, is to be treated as a noun in apposition even though the subsequent combination *Cephenemyia phobifera* has often been used. This is because there was no decisive evidence of its use as an adjective in the original work.

It must be noted, however, that the gender ending of some genuine adjectives is occasionally incorrect in the original combination itself, and must then be corrected according to Art. 34.2 of the Code (ICZN 1999).

The present article uses Dickinson (2003) as its baseline for assessing species-group names. Correct spellings that differ from those used by Dickinson (2003) are presented in bold type. In order to make it easier to follow changes in gender agreement when an adjective is moved from one genus to another, the gender of each genus is indicated in square brackets [M = masculine, F = feminine, N = neuter] in the tables.

In the tables, we indicate the current spelling (Dickinson 2003) as well as the correct spelling (in bold type) when it differs.

# Names ending in *-fer, -fera* or *-ger, -gera*

As stated above, many classical Latin words ending in *-fer* or *-ger* are formed from the verbs *ferre* (to carry) or *gerere* (to bear): some are nouns, most are adjectives, and a few are nouns as well as adjectives (Glare 1982). It must be noted that there are no classical Latin nouns ending in *-ferus* and *-gerus*, and these can therefore only be adjectives, on the model of the participle *morigerus*, *-a*, *-um* (or on the model of words where the adjectival suffix *-us*, *-a*, *-um* is added to a noun ending with a consonant [such as *r*]: Woods 1944).

According to Art. 31.2.2 (ICZN 1999), newly derived names, such as *phobifer*, are nouns in apposition unless the original work includes an indication of their use as adjectives. On

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the other hand, given their grammatical properties, newly derived names originally ending in *\_fera*, *\_ferum* or *\_gera*, *\_gerum* may be taken as indicative of adjectival use.

Among the avian species-group names in the present category, some are solely adjectives or solely nouns in classical Latin (Glare 1982) and are not addressed here. Table 1 shows only those that can be either nouns or adjectives under Art. 31.2.2 (ICZN 1999) and is split according to which must be treated as nouns and which must be considered as adjectives.

The six names marked for correction in Table 1 warrant comments in reference to the spellings used by Dickinson (2003):

*Strix crucigera* von Spix, 1824, in which *crucigera* is adjectival, must be spelled *Otus choliba cruciger* or *Megascops choliba cruciger* (not *crucigerus*) because –*ger* and –*fer* are the usual masculine forms of –*gera* and –*fera* (as noted in the example of Art. 31.2.2, above).

*Ciconia crumenifera* Lesson, 1831, in which *crumenifera* is adjectival, must be spelled *Leptoptilos crumenifer* (not *crumeniferus*) because *–fer* is the usual masculine form of *–fera*. Note: *Leptoptilos crumenifer* was used by Reichenow (1900). In his symonymy, he lists a majority of *Leptoptilos / Leptoptilus crumenifer*, several *L. crumeniferus*, and two or three *L. crumenifera*. *Leptoptilos crumeniferus* has been used since Peters (1931).

*Thripophaga guttuligera* P. L. Sclater, 1854, in which *guttuligera* is adjectival, must be spelled *Premnornis guttuliger*.

Aegotheles plumifera Ramsay, 1883, in which plumifera is adjectival, must be spelled Aegotheles bennettii plumifer (not plumiferus) because –fer is the usual masculine form of –fera.

Lobospingus sigillifer DeVis, 1897, in which sigillifer has to be taken as a noun in apposition, must be spelled *Erythrura trichroa* sigillifer.

*Thamnophilus unduliger* von Pelzeln, 1869, in which *unduliger* must be treated as a noun in apposition, must be spelled *Frederickena unduliger*. Note: this combination was used from 1869 to 1914, followed by *Taraba* [M] *unduliger* (Chapman 1917). *Mackenziaena* [F] *unduliger* was used by Cory & Hellmayr (1924), but *Frederickena unduligera* has been in use since Peters (1951).

### Classical Latin words that are nouns as well as adjectives

Some species-group names are classical Latin words that are nouns as well as adjectives (Table 2), and must be treated under Art. 31.2.2 (ICZN 1999). We examined 23 cases and conclude from their original grammatical properties that all must be treated as nouns, and that the gender ending of three of them was changed unduly because nothing in the original description indicates that any are adjectives. Consequently:

*Psittacus mercenarius* von Tschudi, 1844, in which *mercenarius* has to be taken as a noun in apposition, must be spelled *Amazona mercenarius*.

*Muscadivores aeneus vicinus* Riley, 1927, in which *vicinus* has to be taken as a noun in apposition, must be spelled *Ducula aenea vicinus*.

*Piezorhynchus vidua* Tristram, 1879, in which *vidua* has to be taken as a noun in apposition, must be spelled *Monarcha vidua*.

# The adjective *nesophilus*, *–a*, *–um*

In listing *Thraupis episcopus nesophilus* Riley, 1912, Storer (1970: 319, footnote) states that 'words compounded with the root *–philus* may be treated as nouns or as adjectives' and that '*nesophilus* in this instance stands in apposition and is to be written as a masculine noun'. However, the final component *–philus* is the Latinized Greek adjective  $\phi \iota \lambda \circ \varsigma$  (philos: fond of) (Liddell & Scott 1996). Once Latinized, compound species-group names ending in

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### TABLE 1

Status of original species-group names ending in *-fer, -ger, -fera* or *-gera*.

Original combination	Status	Current combination (Dickinson 2003)
Tetraogallus [M] tibetanus aquilonifer R. & A.	Noun	Tetraogallus [M] tibetanus aquilonifer
Meinertzhagen, 1926		
Accipiter [M] guttifer Hellmayr, 1917	Noun	Accipiter [M] bicolor guttifer
Caprimulgus [M] pectoralis guttifer Grote, 1921	Noun	Caprimulgus [M] ruwenzorii guttifer
Picumnus [M] guttifer Sundevall, 1866	Noun	Picumnus [M] albosquamatus guttifer
Tarsiger [M] guttifer Reichenow & Neumann, 1895	Noun	Pogonocichla [F] stellata guttifer
Totanus [M] guttifer von Nordmann, 1835	Noun	Tringa [F] guttifer
Dendrocolaptes [M] lacrymiger de Lafresnaye, 1849	Noun	Lepidocolaptes [M] lacrymiger
Myrmelastes [M] exsul maculifer Hellmayr, 1906	Noun	Myrmeciza [F] exsul maculifer
Dimorpha [F] monileger Hodgson, 1845	Noun	Ficedula [F] monileger
Batrachostomus [M] moniliger Blyth, 1846	Noun	Batrachostomus [M] moniliger
Dendrexetastes [M] rufigula moniliger Zimmer, 1934	Noun	Dendrexetastes [M] rufigula moniliger
Formicarius [M] moniliger P. L. Sclater, 1857	Noun	Formicarius [M] analis moniliger
Cephalopterus [M] penduliger P. L. Sclater, 1859	Noun	Cephalopterus [M] penduliger
Nystactes [M] tamatia punctuliger Todd, 1943	Noun	Bucco [M] tamatia punctuliger
Thamnophilus [M] punctuliger von Pelzeln, 1869	Noun	Thamnophilus [M] aethiops punctuliger
Edolius [M] remifer Temminck, 1823	Noun	Dicrurus [M] remifer
Cinclosoma [N] setafer Hodgson, 1836	Noun	Garrulax [M] lineatus setafer
Lobospingus [M] sigillifer De Vis, 1897	Noun	<i>Erythrura</i> [F] <i>trichroa sigillifera</i> [should be <i>sigillifer</i> ]
Oriolus [M] chlorocephalus speculifer Clancey, 1969	Noun	Oriolus [M] chlorocephalus speculifer
Anthipes [M] submoniliger Hume, 1877	Noun	Ficedula [F] solitaris submoniliger
Tyrannus [M] tuberculifer de Lafresnaye & d'Orbigny, 1837	Noun	Myiarchus [M] tuberculifer
Thamnophilus [M] unduliger von Pelzeln, 1869	Noun	Frederickena [F] unduligera [should be unduliger]
Trochilus [M] violifer Gould, 1846	Noun	Coeligena [F] violifer
Aedicnemus [M] vocifer l'Herminier, 1837	Noun	Burhinus [M] bistriatus vocifer
Falco [M] vocifer Daudin, 1800	Noun	Haliaeetus [M] vocifer
Strix [F] crucigera von Spix, 1824	Adjective	Otus [M] choliba crucigerus [should be cruciger]
Ciconia [F] crumenifera Lesson, 1831	Adjective	<i>Leptoptilos</i> [M] <i>crumeniferus</i> [should be <i>crumenifer</i> ]
Hirundo [F] filifera Stephens, 1825	Adjective	Hirundo [F] smithii filifera
Ptilotis [M] filigera Gould, 1851	Adjective	Xanthotis [M] flaviventer filiger
Thripophaga [F] guttuligera P. L. Sclater, 1854	Adjective	Premnornis [M] guttuligera [should be guttuliger]
Calliste [F] lunigera P. L. Sclater, 1851	Adjective	Tangara [F] parzudakii lunigera
Cinclosoma [N] monilegera Hodgson, 1836	Adjective	Garrulax [M] monileger
Aegotheles [M] plumifera Ramsay, 1883	Adjective	<i>Aegotheles</i> [M] <i>bennettii plumiferus</i> [should be <i>plumifer</i> ]
Ortyx [F] plumifera Gould, 1837	Adjective	Oreortyx [M] pictus plumifer
Geophaps [F] plumifera Gould, 1842	Adjective	Geophaps [F] plumifera
Numida [F] plumifera Cassin, 1857	Adjective	Guttera [F] plumifera
Thalurania [F] colombica rostrifera W. H. Phelps & W. H. Phelps, Jr. 1956	Adjective	Thalurania [F] colombica rostrifera
Emberiza [F] speculifera de Lafresnaye & d'Orbighy, 1837	Adjective	Diuca [F] speculifera
Schistochlamys [F] speculigera Gould, 1855	Adjective	Conothraupis [F] speculigera
Muscicapa [F] speculigera Bonaparte, 1851	Adjective	Ficedula [F] hypoleuca speculigera
Synallaxis [F] sulphurifera Burmeister, 1868	Adjective	Cranioleuca [F] sulphurifera

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#### TABLE 2

Status of original species-group names that are classical Latin nouns as well as adjectives.

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Original combination	Status	Current combination (Dickinson 2003)
Psittacus [M] mercenarius von Tschudi, 1844	Noun	Amazona [F] mercenaria [should be mercenarius]
Alauda [F] (Megalophonus) plebeja Cabanis, 1875	Noun	Mirafra [F] sabota plebeja
Phrygilus [M] plebejus von Tschudi, 1844	Noun	Phrygilus [M] plebejus
Ixos plebejus [M] Cretzschmar, 1828	Noun	Turdoides [F] plebejus
Turdus [M] plebejus Cabanis, 1861	Noun	Turdus [M] plebejus
Larus [M] (Dominicanus) vetula Bruch, 1853	Noun	Larus [M] dominicanus vetula
Muscipipra [F] vetula M. H. C. Lichtenstein, 1823	Noun	Muscipipra [F] vetula
Penelope [F] vetula Wagler, 1830	Noun	Ortalis [F] vetula
Cuculus [M] Vetula Linnaeus, 1758	Noun	Saurothera [F] vetula
Cercomacra [F] tyrannina vicina Todd, 1927	Noun	Cercomacra [F] tyrannina vicina
Muscadivores [M] aeneus vicinus Riley, 1927	Noun	Ducula [F] aenea vicina [should be vicinus]
Cinnyris [M]1 sericea vicina Mayr, 1936	Noun	Leptocoma [F] sericea vicina
Ptilotis [M] <sup>2</sup> analoga vicina Rothschild & Hartert, 1912	Noun	Meliphaga [F] vicina
Halcyon [F] chloris vicina Mayr, 1931	Noun	Todiramphus [M] chloris vicina
Chordeiles [M] virginianus vicinus Riley, 1903	Noun	Chordeiles [M] gundlachii vicinus
Dicrurus [M] hottentottus vicinus Rensch, 1928	Noun	Dicrurus [M] hottentottus vicinus
Passer [M] melanurus vicinus Clancey, 1958	Noun	Passer [M] melanurus vicinus
Ptilopus [M] lewisii vicinus Hartert, 1895	Noun	Ptilinopus [M] viridis vicinus
Harpactes [M] vidua Ogilvie-Grant, 1892	Noun	Harpactes [M] orrhophaeus vidua
Hypocnemis [F] vidua Hellmayr, 1905	Noun	Hylophylax [M] poecilinotus vidua
Motacilla [F] vidua Sundevall, 1850	Noun	Motacilla [F] aguimp vidua
Rhipidura [F] vidua Salvadori & Turati, 1874	Noun	Rhipidura [F] rufiventris vidua
Piezorhynchus [M] vidua Tristram, 1879	Noun	Monarcha [M] viduus [should be vidua]

<sup>1</sup> *Cinnyris* was treated as feminine by Mayr (1936), but it is now masculine according to the ICZN (1999) Code—see David & Gosselin (2002b).

<sup>2</sup> *Ptilotis* was treated as feminine by Rothschild & Hartert (1912), but it is now masculine according to the ICZN (1999) Code.

*—philus* and *—phila* are to be treated as adjectives only (ICZN 1999: Art. 31.2, 34.2) and do not fall under Art. 31.2.2. It is thus apparent that Riley (1912) used *nesophilus* because he thought *Thraupis* was masculine on account of the masculine ending of *episcopus*. However, *episcopus* is a noun in apposition. Consequently:

*Thraupis* [F] *episcopus nesophilus* Riley, 1912, must be corrected to *Thraupis episcopus nesophila*.

# The species-group names phoenicurus and phoenicura

The three original species-group names *phoenicura* in Dickinson (2003) are the Latinized feminine form of the properly formed Greek adjectival φοινικουφος (phoinikouros: red-tailed), and their current combinations reflect this (Table 3).

On the other hand, the five original *phoenicurus* are either the Latin noun *phoenicurus* (redstart) or the Latinized masculine Greek adjectival φοινικουφος. Except for *Gallinula phoenicurus* Pennant, 1769, and *Motacilla Phoenicurus* Linnaeus, 1758, where *phoenicurus* was originally combined with a feminine genus, and hence treated as a noun, all other authors quoted in Table 4 specifically referred to the red / ferruginous / chestnut tail of the species in question, an indication of the 'red-tailed' adjectival meaning.

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Status of	the species-grou	p name phoenicura.	_
Original combination	Status	Current combination (Dickinson 2003)	
Mirafra [F] phoenicura Franklin, 1831	Adjective	Ammomanes [F] phoenicura	
Rhipidura [F] phoenicura Müller, 1843	Adjective	Rhipidura [F] phoenicura	
Tyrannula [F] phoenicura P. L. Sclater, 1855	Adjective	Myiotriccus [M] ornatus phoenicurus	_
Status of t	TABLE	4 2 name phoenicurus	
Original combination	Status	Current combination (Dickinson 2003)	
Attila [M] phoenicurus von Pelzeln, 1868	Adjective	Attila [M] phoenicurus	
Conurus [M] phoenicurus Schlegel, 1864	Adjective	Pyrrhura [F] molinae phoenicura	
Eremobius [M] phoenicurus Gould, 1839	Adjective	Eremobius [M] phoenicurus	
Gallinula [F] phoenicurus Pennant, 1769	Noun	Amaurornis [F] phoenicurus	
Motacilla [F] Phoenicurus Linnaeus, 1758	Noun	Phoenicurus [M] phoenicurus	

### TABLE 3 Status of the species-group name *phoenicura*

# The species-group names coryphaea and coryphaeus / coryphoeus

In the combination *Barbatula* [F] *coryphaea* Reichenow, 1892, the word *coryphaea* is either the Latinized Greek noun  $\kappa o \rho v \phi \alpha \iota \alpha$  (koruphaia: tuft on the crown) or the Latinized feminine form of the Greek adjective  $\kappa o \rho v \phi \alpha \iota o \varsigma$  (koruphaios: at the top). In the original description, Reichenow did not indicate that he was using the adjectival form, therefore *coryphaea* is here a noun. Consequently:

*Barbatula coryphaea* Reichenow, 1892, in which *coryphaea* is to be taken as a noun in apposition, must be spelled *Pogoniulus coryphaea*.

The Karoo Scrub Robin has long been known as *Erythropygia* [F] *coryphaeus* (e.g. Ripley 1964) or *Cercotrichas* [F] *coryphaeus* (e.g. Wolters 1982, Keith *et al.* 1992), from *Sylvia* [F] *coryphaeus* Lesson, 1831. Lesson's *coryphaeus* is the Latin noun *coryphaeus* (chief of chorus) used as a noun in apposition, as indicated by its combination with the feminine genus *Sylvia*. However, Clancey & Brooke (1990: 143) showed that the original description is to be cited as *Sylvia coryphoeus* Vieillot, 1817. Lesson's *coryphaeus* differs in spelling from Vieillot's *coryphoeus*, but whether the correct spelling is taken to be *coryphaeus* or *coryphoeus*, there is no evidence of an adjectival use in the original description.

### The species-group names amazonus, amazona, amazonum

The nouns '*amazonus*' and '*amazona*' do not exist in classical Latin. Thus the epithets *amazonus* and *amazona* are the adjectival form of *Amazon* (classical Latin noun), where the adjectival suffixes –*us*, –*a* are added to a noun ending with a consonant (Woods 1944). The original (and proper) combinations (Table 5) all represent variable adjectives.

However, the plural genitive of the Greek noun 'Amazôn' (Aµ $\alpha$ ç $\omega$ v), declined like 'daimôn', is Amazonon, Latinized as *Amazonum*. Since there is no clear evidence of an adjectival use in the original combinations, all *amazonum* must be treated as a noun in the genitive case (Table 5), the default conclusion of the ICZN Code (1999) in the case of non-existent or conflicting evidence. Consequently:

*Heteropelma amazonum* P. L. Sclater, 1861, in which *amazonum* has to be taken as a noun in the genitive case, must be spelled *Schiffornis turdina amazonum* (*contra* David & Gosselin 2002b: 280).

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Status of the species-group names amazonus, amazona and amazonum.

Original combination	Status	Current combination (Dickinson 2003)
Alcedo [F] amazona Latham, 1790	Adjective	Chloroceryle [F] amazona
Capsiempis [F] flaveola amazona Zimmer, 1955	Adjective	Capsiempis [F] flaveola amazona
Pipromorpha [F] macconnelli amazona Todd, 1921	Adjective	Mionectes [M] macconnelli amazonus
Pachyramphus [M] castaneus amazonus Zimmer, 1936	Adjective	Pachyramphus [M] castaneus amazonus
Sittasomus [M] amazonus de Lafresnaye, 1850	Adjective	Sittasomus [M] griseicapillus amazonus
Terenotriccus [M] erythrurus amazonus Zimmer, 1939	Adjective	Terenotriccus [M] erythrurus amazonus
Ateleodacnis [F] speciosa amazonum Hellmayr, 1917	Noun	Conirostrum [N] speciosum amazonum
Heteropelma [N] amazonum P. L. Sclater, 1860	Noun	<i>Schiffornis</i> [F] <i>turdina amazona</i> [should be <i>amazonum</i> ]
Pyrrhura [F] picta amazonum Hellmayr, 1906	Noun	Pyrrhura [F] picta amazonum
Ramphocaenus [M] melanurus amazonum Hellmayr, 1907	Noun	Ramphocaenus [M] melanurus amazonum
Urogalba [F] amazonum P. L. Sclater, 1855	Noun	Galbula [F] dea amazonum

#### TABLE 6

Status of original species-group names established by Smith (1836, 1838-49).

Original combination	Status	Current combination (Dickinson 2003)
Mirafra [F] cheniana A. Smith, 1843	Noun	Mirafra [F] cheniana
Drymoica [F] chiniana A. Smith, 1843	Noun	Cisticola [M] chiniana
Drymoica [F] cherina A. Smith, 1843	Noun	Cisticola [M] cherina
Alauda [F] chuana A. Smith, 1836	Noun	Certhilauda [F] chuana
Ortygis [M] <sup>1</sup> Lepurana A. Smith, 1836	Noun	Turnix [M] sylvaticus lepuranus [should be lepurana]
Merula [F] Libonyana A. Smith, 1836	Noun	Turdus [M] libonyanus [should be libonyana]

<sup>1</sup>Although Ortygis is masculine according to the ICZN (1999) Code, it was sometimes treated as feminine in the past.

# Six names established by Andrew Smith

Smith (1836) established *Ortygis lepurana, Alauda chuana* and *Merula libonyana*. In his work (p. 57), he writes 'The names given by the Natives to the objects above described, I have adopted as the trivial ones...', thus indicating that they are nouns in apposition. Smith (1838–49) subsequently confirmed this treatment by using the combinations *Hemipodius lepurana* and *Turdus libonyana*. He also established the names *Drymoica cherina, Drymoica chiniana* and *Mirafra cheniana* (Smith 1838–1849). As there is not the slightest indication in his work for considering these names as possibly adjectival (let alone solely adjectival), they must be taken as nouns in apposition (Table 6). Consequently:

Ortygis Lepurana A. Smith, 1836, in which lepurana has to be taken as a noun in apposition, must be spelled *Turnix sylvaticus lepurana*.

*Merula Libonyana* A. Smith, 1836, in which *libonyana* has to be taken as a noun in apposition, must be spelled *Turdus libonyana*.

# The species-group name serinus

The name *serinus* is Latinized from the French noun 'serin', which dates back to 1478 (*Trésor de la langue française* 1971–94) and has been used in English since 1530 (Little *et al.* 1973). When establishing *Fringilla* [F] *Serinus*, Linnaeus (1766: 320) cited the generic name *Serinus* of Gessner, Aldrovandi, Brisson, Willughby and Ray. There is therefore no doubt that Linnaeus used *serinus* as a noun in apposition.

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Status of the species-group names <i>garrulus</i> and <i>garrula</i> .			
Original combination	Status	Current combination (Dickinson 2003)	
Coracias [M] <sup>1</sup> Garrulus Linnaeus, 1758	Noun	Coracias [M] garrulus	
Lanius [M] Garrulus Linnaeus, 1758	Noun	Bombycilla [F] garrulus	
Psittacus [M] garrulus Linnaeus, 1758	Adjective	Lorius [M] garrulus	
Phasianus [M] garrulus von Humboldt, 1805	Adjective	Ortalis [F] garrula	
Certhilauda [F] garrula A. Smith, 1846	Adjective	Chersomanes [F] albofasciata garrula	

TABLE 7 Status of the species-group names garrulus and garrula.

In the original description of *Criniger* [M] *serinus* J. & E. Verreaux, 1855, there is no indication that *serinus* was used adjectivally. Therefore, it is a noun in apposition, the default conclusion of the ICZN Code (1999) in the case of non-existent or conflicting evidence. Consequently:

*Criniger serinus* J. & E. Verreaux, 1855, in which *serinus* has to be taken as a noun in apposition, must be spelled *Calyptocichla serinus*.

### The species-group names garrulus and garrula

*Garrulus* is a classical Latin adjective, but when Linnaeus (1758) used the combination *Coracias Garrulus*, he based it on the pre-Linnaean generic name of the *Garrulus argentoratensis* of Ray and Edwards. Both this indication and Linnaeus' use of the masculine word *Garrulus* (note the upper case) in combination with the feminine genus *Coracias*<sup>1</sup> indicate that he regarded *Garrulus* as a noun.

Similarly, Linnaeus' *Lanius Garrulus* (note the upper case) was also based on a pre-Linnaean generic name, *Garrulus bohemicus* of Gessner, Aldrovandi, Willughby, Ray, Albin and Frisch (see also David & Gosselin 2000). See Table 7.

# Some Linnaean and post-Linnaean geographical names

This group consists of 40 geographical names (toponyms) that have been treated in various ways over the years (Table 8). Thirty-one were established by Linnaeus, seven by his immediate successors (Statius Müller, Hermann, Latham, Cuvier), and two by modern authors (Lynes, Zimmer & W. H. Phelps). Many of these names are problematic because the same word (e.g. *Cayana, Dominica*) was sometimes used as both a place name and a geographical adjective. A simplistic approach would be to regard as adjectives the species-group names where Linnaeus used a lower case initial, an 'indication' that he considered them adjectives (Parkes 1982). However, a closer look has shown that occasionally some of these words are not adjectival (David & Gosselin 2000).

### Pre-Linnaean generic names

*bengalus* and *canaria*.—Two species names introduced by Linnaeus, *Fringilla bengalus* Linnaeus, 1766, and *Fringilla Canaria* Linnaeus, 1758, may look like geographical adjectives at first, but are in fact generic bird names quoted by Linnaeus from previous authors (Brisson, Gessner, Aldrovandi). *Canaria* has the capital initial letter generally used by Linnaeus for nouns, while *bengalus* does not agree in gender with *Fringilla*, two supplementary

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<sup>&</sup>lt;sup>1</sup> Coracias was treated as feminine by Linnaeus (1758) but it is now masculine because of an ICZN Ruling (Hemming 1956).

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TABLE 8

Status of some Linnaean and post-Linnaean geographical species-group names.

Original combination	Status	Current combination (Dickinson 2003)
Fringilla [F] bengalus Linnaeus, 1766	Noun	Uraeginthus [M] bengalus
Fringilla [F] Canaria Linnaeus, 1758	Noun	Serinus [M] canaria
Cisticola $[M]^1$ ruficevs guinea Lynes, 1930	Noun	Cisticola [M] ruficevs guinea
Columba [F] guinea Linnaeus, 1766	Noun	Columba [F] guinea
Fringilla [F] jamaica Linnaeus, 1766	Noun	Euphonia [F] jamaica
Loxia [F] malacca Linnaeus, 1766	Noun	Lonchura [F] malacca
Tanagra [F] bresilia Linnaeus, 1766	Adjective	Ramphocelus [M] bresilius
<i>Fulica</i> [F] <i>Cajanea</i> Statius Müller, 1776	Adjective	Aramides [M] cajanea [should be cajaneus]
Picus [M] carolinus Linnaeus, 1758	Adjective	Melanerpes [M] carolinus
Rallus [M] carolinus Linnaeus, 1758	Adjective	Porzana [F] carolina
Turdus [M] Carolinus Statius Müller, 1776	Adjective	Euphagus [M] carolinus
Ampelis [F] cayana Linnaeus, 1766	Adjective	Cotinga [F] cayana
Motacilla [F] cayana Linnaeus, 1766	Adjective	Dacnis [F] cayana
Tanagra [F] cayana Linnaeus, 1766	Adjective	Tangara [F] cayana
Charadrius [M] cayanus Latham, 1790	Adjective	Vanellus [M] cayanus
Corvus [M] cayanus Linnaeus, 1766	Adjective	Cyanocorax [M] cayanus
Cuculus [M] cayanus Linnaeus, 1766	Adjective	Piaya [F] cayana
Lanius [M] cayanus Linnaeus, 1766	Adjective	Tityra [F] cayana
Anas [F] dominica Linnaeus, 1766	Adjective	Nomonyx [M] dominicus
Motacilla [F] dominica Linnaeus, 1766	Adjective	Dendroica [F] dominica
Tanagra [F] dominica Linnaeus, 1766	Adjective	Dulus [M] dominicus
Colymbus [M] dominicus Linnaeus, 1766	Adjective	Tachybaptus [M] dominicus
Trochilus [M] dominicus Linnaeus, 1766	Adjective	Anthracothorax [M] dominicus
Charadrius [M] Dominicus Statius Müller, 1776	Adjective	Pluvialis [F] dominica
Turdus [M] Guajanus Statius Müller, 1776	Adjective	Pitta [F] guajana
Columba [F] martinica Linnaeus, 1766	Adjective	Geotrygon [F] montana martinica
Fulica [F] martinica Linnaeus, 1766	Adjective	Porphyrio [M] martinica [should be martinicus]
Muscicapa [F] martinica Linnaeus, 1766	Adjective	Elaenia [F] martinica
Hirundo [F] martinica Hermann, 1783	Adjective	Chaetura [F] martinica
Loxia [F] molucca Linnaeus, 1766	Adjective	Lonchura [F] molucca
Ibis [F] molucca Cuvier, 1829	Adjective	<i>Threskiornis</i> [M] <i>molucca</i> [should be <i>moluccus</i> ]
Fringilla [F] Senegala Linnaeus, 1766	Adjective	Lagonosticta [F] senegala
Parra [F] senegalla Linnaeus, 1766	Adjective	Vanellus [M] senegallus
Lanius [M] Senegalus Linnaeus, 1766	Adjective	Tchagra [M] senegalus
Psittacus [M] Senegalus Linnaeus, 1766	Adjective	Poicephalus [M] senegalus
Tetrao [M] senegallus Linnaeus, 1771	Adjective	Pterocles [M] senegallus
Aratinga [F] pertinax surinama Zimmer & W. H. Phelps, 1951	Adjective	Aratinga [F] pertinax surinama
Muscicapa [F] surinama Linnaeus, 1766	Adjective	Pachyramphus [M] surinamus
Turdus [M] surinamus Linnaeus, 1766	Adjective	Tachyphonus [M] surinamus
Turdus [M] zeylonus Linnaeus, 1766	Adjective	Telophorus [M] zeylonus

<sup>1</sup>*Cisticola* was treated as feminine by Lynes (1930) but it is now masculine according to the ICZN (1999) Code.

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indications that we are indeed dealing with nouns in apposition, the default conclusion of the ICZN Code (1999) in the case of non-existent or conflicting evidence.

#### **Unmodified** place names

guinea.—In Columba guinea Linnaeus, 1758, the author used an unmodified modern place name (cf. 'Habitat in Guinea' in Linnaeus' account (p. 175) of Loxia melanocephala). Contrarily to guineensis (e.g. in Ovis guineensis Linnaeus, 1758), there is no adjectival suffix in guinea, which is the English place name used by Albin and Edwards when they originally reported the species. Guinea is derived from the vernacular African word 'Aguinaw' (Encyclopaedia Britannica 2010). The same conclusion applies to Cisticola ruficeps guinea Lynes, 1930.

*jamaica.*—When Linnaeus (1766) established *Fringilla jamaica*, he used an unmodified modern place name (*cf. 'Habitat in* Jamaica') instead of an adjectival form (as in *Columba jamaicensis* Linnaeus, 1766). There is no adjectival suffix in the word *jamaica*, which is the English place name used by Sloane when he originally reported the species. Jamaica is derived from the Arawak word 'Xaymaca' (Encyclopaedia Britannica 2010).

*malacca.*—For *Loxia malacca* Linnaeus, 1766, the internal evidence ('*Habitat in* ... Malacca'), together with the fact that Linnaeus coined the adjectival *malaccensis* elsewhere in his work (p. 75), indicate a modern place name for this word. There is no adjectival suffix in the word *malacca*, which is the French (and Latin) place name used by Seba (1734), the source for *Erinaceus malaccensis* Linnaeus, 1766. The place name Malacca is apparently derived from the Malay tree name 'melaka' (Bosworth 2007).

### Properly formed adjectives

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*bresilia*.—The *Tanagra bresilia* of Linnaeus (1766) was founded in great part on the *Merula bresilica* of previous authors, and based on the 'Merle de bresil' of Belon (1555: 319). The *bresilia* of Linnaeus is thus a variant of *bresilica*, with a different adjectival ending (*-ia* instead of *-ica* (Woods 1944)) added to the word 'bresil'. '*Bresilia*' is nowhere used as a place name by Linnaeus.

*cajanea*. —This word, in Statius Müller (1776), is a geographical adjective based on the Latinized root of Statius Müller's place name 'Cajenne', with the addition of the adjectival suffix *-eus*, *-ea* (Woods 1944). This interpretation is confirmed by the matching German name ('Das cajennische Wasserhuhn *Fulica Cajanea'*) and the clearly adjectival use of the same word elsewhere in the work ('Die cajennische Merle *Turdus Cajaneus'*). Statius Müller (1776) used capital initial letters for all of his species-group names, so this fact has no special significance here.

*surinamus*, –*a*.—In *Muscicapa surinama* Linnaeus, 1766, and *Turdus surinamus* Linnaeus, 1766, the species-group name is a Latinized geographical adjective, derived from the place name 'Suriname' (*cf. 'Habitat* Surinami' [ablative]) or 'Surinam' (*cf.* 'Merle de Surinam' in Brisson (1760), the basis for Linnaeus' *Turdus surinamus*). Linnaeus used the adjectival *surinamus*, –*a* in proper gender agreement with the matching genera. Since Suriname ends in a mute 'e', an adjectival suffix –*us*, –*a* after a consonant is an appropriate interpretation of *surinamus*, –*a* (*cf.* Woods 1944). *Aratinga pertinax surinama* Zimmer & W. H. Phelps, 1951, is based on the cited place name 'Surinam', again with the adjectival suffix –*us*, –*a* after a consonant.

#### Adjectives resembling Latinized place names

*carolinus.*—As used by Linnaeus (1758) and Statius Müller (1776), *carolinus* is a Latin adjective, coined on the same pattern and with the same etymology as the modern place name 'Carolina'.

*cayanus*, –*a*.—As used by Linnaeus (1766), this is a geographical adjective and, like the Latinized place names 'Cayana' and 'Cayania', it is derived from the French place name 'Cayenne' (of Brisson 1760, the source for Linnaeus' names). Linnaeus used the adjectival *cayanus*, –*a* in proper gender agreement with the matching genera. Since Cayenne ends in a mute 'e', an adjectival suffix –*us*, –*a* after a consonant is an appropriate interpretation of *cayanus*, –*a* (*cf*. Woods 1944).

*dominicus*, –*a*. – This word is a Latin adjective. When Linnaeus (1766) created *Tanagra dominica* and *Motacilla dominica*, he surprisingly referred to 'Dominica' as a place name ('*Habitat in* Dominica'). However, this is an idiosyncratic application because the locality he referred to (and which his source (Brisson 1760) called 'Dominicensi Insula') has been universally known as 'Saint-Domingue' or 'Santo Domingo'. The 'Dominica' of Linnaeus is thus an abbreviated place name that has no link with present-day Dominica. We conclude that Linnaeus' usage of *dominica* in *Tanagra* and *Motacilla* is indeed adjectival, since *dominicus* is an adjective used elsewhere by Linnaeus (1766) in a similar context (*cf. Colymbus dominicus, Trochilus dominicus, Turdus dominicus*).

*guajanus.*—As used by Statius Müller (1776), this is a geographical adjective, and like the Latinized place name 'Guajana', it is derived from the French name 'Guiane' (of Buffon, *cf.* Mayr 1979). Statius Müller's proper gender agreement for this word, and the fact that Guiane (like Cayenne) ends in a mute 'e', sanctions the presence of the suffix –*us*, –*a* after a consonant as an appropriate interpretation of *guajanus* (Woods 1944). Statius Müller (1776) used capital initial letters for all of his species-group names, so this fact has no special significance here.

*martinica.*—As used by Linnaeus (1766), this is a geographical adjective, and like the Latinized place name 'Martinica', it is derived from the French name 'Martinique' (of Brisson 1760, the source of Linnaeus' name). Linnaeus' proper gender agreement for this word, and the fact that Martinique (like Cayenne and Guiane) ends in a mute 'e', sanctions the presence of the suffix *–us*, *–a* after a consonant as an appropriate interpretation of *martinica* (Woods 1944).

*molucca*.—In *Loxia molucca* Linnaeus, 1766, *molucca*, like the Latinized place name 'Moluccae' (*cf. 'Habitat in ...* Moluccis' [ablative]) and similar words in many languages, is derived from the Arabic root 'Muluk' (Gray 1887). Here again, the Latin adjectival suffix –*us*, –*a* after a consonant is an appropriate interpretation of *molucca* (Woods 1944). *Ibis molucca* Cuvier, 1829, is similar and is therefore also adjectival. Mees (1982) treated Cuvier's *molucca* as adjectival, but Sibley & Monroe (1990: 313) and Andrew (1992: 45) proposed, without explanation, that the name was a noun in apposition.

*zeylonus*.—This geographical adjective, like the Latinized place name 'Zeylona', is derived from a Germanic form of the word Ceylan (Zeylon), with the adjectival suffix *–us*, *–a* after a consonant (Woods 1944).

#### Senegallus, -a and senegalus, -a

*senegallus*, *–a.*—This word is used by Linnaeus (1766, 1771) as a geographical adjective derived from the Latinized place name 'Senegallia' (*cf. 'Habitat in ...* Senegallia') in the same way as the classical noun / adjective *gallus*, *–a* is derived from '*Gallia*' (Gaul). Linnaeus used lower case initial letters for *senegallus*, *–a*, contrarily to *Senegalus*, *–a* (see below).

*senegalus, –a.*—This adjective is derived from the place name 'Senegal' (*cf. 'Habitat in ...* Senegal') with the addition of the adjectival suffix *–us, –a* after a consonant (Woods 1944). For unstated reasons, Linnaeus (1766) used capital initial letters for this word. For *Fringilla Senegala* Linnaeus, 1766, he quoted Brisson's (1760) generic name '*Senegallus*' (actually spelled *Senegalus* by Brisson) as a source for the taxon, yet he modified the word and its

ending to match the gender of *Fringilla*. The species-group names *Senegalus* and *Senegala* of Linnaeus are to be treated as adjectives because of their grammatical properties and because Linnaeus modified each of them to agree in gender with its matching generic name.

Given the above, three spellings of geographical names need to be modified:

*Fulica Cajanea* Statius Müller, 1776 must be spelled *Aramides cajaneus* (contra David & Gosselin 2002b: 276).

*Ibis molucca* Cuvier, 1829 must be spelled *Threskiornis moluccus*. *Fulica martinica* Linnaeus, 1766 must be spelled *Porphyrio martinicus*.

#### Acknowledgements

We thank Edward C. Dickinson, Steven Gregory and James Jobling for their useful comments on earlier versions of this article. In addition, Richard C. Banks, Murray Bruce, Robert J. Dowsett, Alan P. Peterson and J. Van Remsen provided very helpful information.

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Addresses: Normand David, 10385A Clark Street, Montreal, Quebec, H3L 253, Canada, e-mail: normanddavid@ videotron.ca. Michel Gosselin, Canadian Museum of Nature, P.O. Box 3443, Station D, Ottawa, Ontario, K1P 6P4, Canada, e-mail: mgosselin@mus-nature.ca

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