



A revised nomenclature and classification for family-group taxa of parrots (Psittaciformes)

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Abstract

The last 20 years have seen a resurgence in systematic studies of parrots (Aves: Psittaciformes). Principally but not solely molecular in nature, this body of work has addressed the circumscription of higher level groupings within the Psittaciformes and relationships among them. Stability has now emerged on many formerly contentious matters at these levels. Accordingly, we consider it appropriate to underpin further work on parrot biology with a freshly revised classification at the taxonomic ranks spanned by family-group nomenclature, i.e., between superfamily and tribe. In light of the body of recent work, we advocate a framework of three superfamilies among parrots (Strigopoidea, Cacatuoidea and Psittacoidea) within which Linnaean taxonomy can accommodate present phylogenetic understanding by employing groupings at the ranks of family, subfamily and tribe. Just as importantly, we have addressed numerous issues of nomenclature towards stabilising the family-group names of parrots. We erect two new subfamily names, Coracopseinae Joseph, Toon, Schirtzinger, Wright & Schodde, subfam. nov. and Psittacellinae Joseph, Toon, Schirtzinger, Wright & Schodde, subfam. nov. We stress that rankings we have applied reflect the state of understanding of parrot phylogeny and how it can be summarized in a Linnaean system; comparisons with rankings in other groups are likely not appropriate nor relevant.

Key words: Psittaciformes, parrots, nomenclature, family-group

Introduction

Phylogeny and systematics of parrots (Psittaciformes) have been increasingly active areas of study over the past twenty years. The results of that work have led to substantial revision of our view of evolutionary relationships at the supra-generic level within this order. In this paper we review the taxonomic and nomenclatural implications of these studies. We believe that modern studies of parrot biology will benefit from a systematic framework reflecting the clarity we now have in understanding relationships within and among the major groups of parrots. The underlying systematic work we review has been molecular (Miyaki *et al.* 1998; Brown & Toft 1999; Groombridge *et al.* 2004; de Kloet & de Kloet 2005; Astuti *et al.* 2006; Tavares *et al.* 2006; Tokita *et al.* 2007; Wright *et al.* 2008; Schweitzer *et al.* 2010, 2011; Joseph *et al.* 2011; White *et al.* 2011; Kundu *et al.* 2012) and morphological (Hume 2007; Mayr 2008, 2010; Worthy *et al.* 2011). Our aims are first to clarify the suprageneric groupings indicated by these studies, then to suggest appropriate taxonomic ranks for them and, finally, to determine their nomenclature in accord with the International Code of Zoological Nomenclature (ICZN 1999). We conclude with a recommended classification using that nomenclature (see also Table 1). We hope to have provided a nomenclatural foundation for future taxonomic changes to reflect improved phylogenetic understanding at the family-group level. The symbol † is used to denote extinct genera.

Systematics: implications for taxonomic groupings and rank

Strong agreement has been reached that parrots comprise three major monophyletic groups, here termed Groups 1, 2 and 3 for ease of discussion (Fig. 1). Group 1 comprises the New Zealand genera *Nestor* Lesson and *Strigops*

G.R. Gray. It is sister to Groups 2 and 3, the cockatoos and all other parrots, respectively (de Kloet & de Kloet 2005; Tokita *et al.* 2007; Wright *et al.* 2008; Schweizer *et al.* 2010, 2011; Joseph *et al.* 2011). Emerging consensus suggests that Groups 1 and 2 warrant the taxonomic rank of at least family (see Forshaw 1989, 2002; Schodde 1997a,b; Christidis & Boles 2008; Gill *et al.* 2010 for reviews). Given the evidence that now circumscribes and diagnoses the major clades and subclades throughout Psittaciformes, however, we recognize these three Groups as superfamilies. We aim to show that this best establishes a basis for a practical application of Linnaean nomenclature and classification to the description of parrot phylogeny.

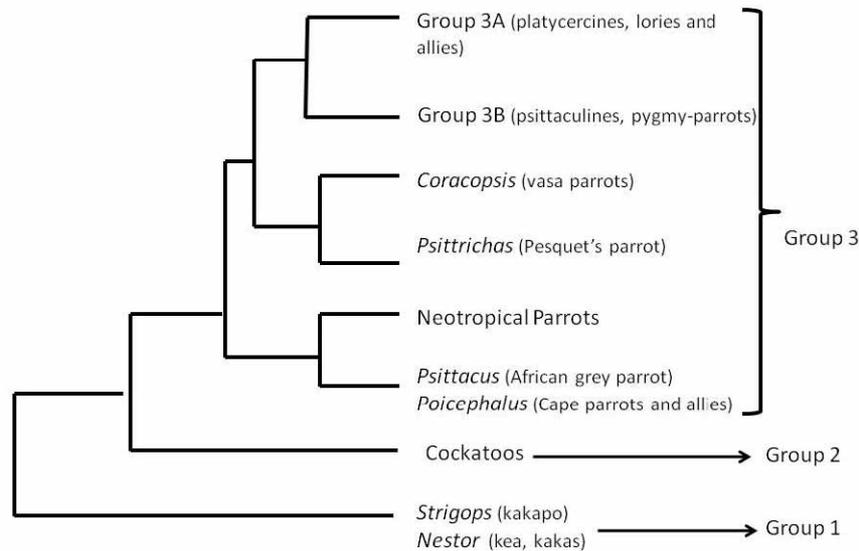


FIGURE 1. Summary of parrot phylogeny with Group numbers used in text, based on Wright *et al.* (2008) and Schweizer *et al.* (2010, 2011).

In Group 1, moreover, the depth in phylogenetic analyses of the divergence between *Nestor* and *Strigops* suggests the merit of the long-held perception that the two are separate at least at tribal rank (Smith 1975; Forshaw 1989; Collar 1997; Tokita *et al.* 2007; Wikipedia 2011a), or, more appropriately we would argue, family rank (Finsch 1867; Peters 1937; Howard & Moore 1980; Bock 1994; Higgins 1999; Dickinson 2003; Gill *et al.* 2010). Worthy *et al.* (2011) indicate that extinct *Nelepsittacus* Worthy, Tennyson and Scofield was more closely related to *Nestor* than to *Strigops*.

In Group 2, the cockatoos, the black cockatoos (*Calyptorhynchus* Desmarest, *Zanda* Mathews) and cockatiel (*Nymphicus* Wagler) are groupings strongly supported by morphological (Schodde 1997a) and molecular data (White *et al.* 2011); *Nymphicus* is most likely the sister to all other cockatoos. White *et al.* (2011) affirmed that the Palm Cockatoo *Probosciger aterrimus* (Gmelin) is sister to the cacatuine clade comprising white cockatoos (*Cacatua* Vieillot spp) and their allies *Lophochroa* Bonaparte, *Callocephalon* Lesson, and *Eolophus* Bonaparte. They included all of these genera in one subfamily. We suggest that a classification should retain *Probosciger* Kuhl in a group of suprageneric rank such that its sister relationship with the cacatuine clade is clear (e.g., Schodde 1997a; de Kloet & de Kloet 2005; Wright *et al.* 2008; White *et al.* 2011, cf. also Brown & Toft 1999). We advocate recognition of one family for all cockatoos with three subfamilies. One of these subfamilies would have two tribes, one for *Probosciger* and one for other members of the cacatuine clade. Below we clarify relevant nomenclatural issues.

Parrots in Group 3 themselves fall into several subgroups as well as several disparate, and likely relictual, Australo-African genera: *Psittacus* Linnaeus, *Poicephalus* Swainson, *Coracopsis* Wagler and *Psitttrichas* Lesson (Fig. 1). Schweizer *et al.*'s (2011) recent clarification of sister-group relationships among these genera help set the scene for this paper's taxonomic and nomenclatural goals.

Psittacus and *Poicephalus*, both from Africa, are consistently recovered as sister taxa with strong support (de Kloet & de Kloet 2005, Tokita *et al.* 2007, Wright *et al.* 2008; Schweizer *et al.* 2010, 2011; Kundu *et al.* 2012). Similarly, the *Psittacus*-*Poicephalus* pair has been recovered as sister to Neotropical parrots albeit with initially inconsistent statistical support until Schweizer *et al.*'s (2011) analysis indicated its robustness. Parenthetically, we

note that Afro-Neotropical sister group relationships are not unknown in some birds and fish (e.g., Old World suboscines, Fjeldsa *et al.* 2003, Chesser 2004; lacantuniid catfish, Lundberg *et al.* 2007). The clade comprising Neotropical parrots-*Psittacus-Poicephalus* is sister to all other parrots in Group 3 (Schweizer *et al.* 2011); among the latter, *Coracopsis* (Madagascar) and *Psittirichas* (New Guinea) also appear to be sister taxa (Joseph *et al.* 2011; Schweizer *et al.* 2011; Kundu *et al.* 2012) and together to be the sister group to groups 3A and 3B, although this last pattern has only moderate support (Tokita *et al.* 2007; Wright *et al.* 2008; Schweizer *et al.* 2011; Kundu *et al.* 2012; cf. de Kloet & de Kloet 2005). Recognition of these relationships might require a fourth superfamily, which could accommodate *Psittacus-Poicephalus* and New World parrots. Rather, we suggest this is an unwieldy option. In contrast, we suggest that the consistent recovery of three major clades in all phylogenetic analyses of parrots—Group 1 in New Zealand, Group 2 comprising the cockatoos, and Group 3 comprising a major radiation among all other parrots—best and most simply drives the taxonomy at this level. Accordingly, and to convey the nature of the radiation in Group 3 and particularly to convey the biogeographically relictual nature of *Coracopsis* and *Psittirichas*, we recommend that each of the three groupings within Group 3, i.e., (Neotropical parrots-*Psittacus-Poicephalus*), (*Coracopsis-Psittirichas*), and (Subgroups 3A+3B of Fig. 1), be given family level rank. Within the first, we recommend subfamily rank for Neotropical parrots and for *Psittacus-Poicephalus*. Within the second we recommend subfamily rank for *Coracopsis* and for *Psittirichas*. We note that *Psittirichas* has been separated at subfamily level in other recent studies and reviews (Boetticher 1959; Homberger 1980; Collar 1997). In regard to Kundu *et al.*'s (2012) extraordinary finding that a cytochrome *b* sequence from mitochondrial DNA (mtDNA) of monotypic, extinct *Mascarinus* Lesson is embedded in *Coracopsis* such that *C. nigra* mtDNAs are not monophyletic, we acknowledge this result but urge further testing. We suggest, for example, that alternative explanations such as a nuclear copy of mtDNA having been extracted from the long-ago damaged *Mascarinus* sample (see Hume 2007) cannot yet be ruled out; moreover, Kundu *et al.* (2012) did not evaluate alternative hypotheses concerning the placement of *Mascarinus*. Thus we consider that the relationships of all three extinct, monotypic Indian Ocean genera, *Mascarinus*, *Necropsittacus* Milne-Edwards and *Lophopsittacus* Newton are unresolved. We now deal with appropriate groupings and ranks within the Neotropical parrots and the rest of Group 3.

Molecular studies have consistently shown that Neotropical parrots comprise at least two monophyletic clades, one of primarily long-tailed species such as the macaws, conures and allies, and the other of primarily short-tailed parrots such as amazons and allies (Miyaki *et al.* 1998; Tavares *et al.* 2006; Wright *et al.* 2008). It is important to note, however, that the positions of ten genera (*Forpus* Boie, *Hapalopsittaca* Ridgway, *Myiopsitta* Bonaparte, *Brotogetis* Vigors, *Touit* G.R. Gray, *Nannopsittaca* Ridgway, *Bolborhynchus* Bonaparte, *Psilopsiagon* Ridgway, *Deroyptus* Wagler, *Pionites* Heine) remain uncertain due either to limited sampling or equivocal results (e.g., Tavares *et al.* 2006). As our goal here is to develop nomenclature that can guide further classifications based on future systematic results, we describe below nomenclature for a single subfamily of Neotropical parrots and two tribes within it: one each for the “long-tailed” and “short-tailed” clades, notwithstanding that tail length may not be fully informative as a systematic trait. We are aware of unpublished work that may lead to recognition of one or more additional tribes, and plan to return to the classification of Neotropical parrots when these further data are available.

In Subgroup 3A, recent work on the systematics of the little-known and enigmatic *Psittacella* Schlegel of New Guinea and *Pezoporus* Illiger of Australia has clarified their immediate relationships within the Australo-Papuan parrot radiation (Joseph *et al.* 2011; Schweizer *et al.* 2011), as well as clarifying the relationships within and between Subgroups 3A and 3B. Although both *Psittacella* and *Pezoporus* have been linked to the rosella-like or broad-tailed, platycercine parrots in Subgroup 3A (e.g., Christidis *et al.* 1991), *Psittacella* has most often been aligned with the Afro-Asian-centred psittaculine parrots of Subgroup 3B. Joseph *et al.* (2011) acknowledged that they were able to study only the two larger species of *Psittacella* (*P. picta* Rothschild, *P. brehmii* Schlegel) not the two smaller ones (*P. madaraszi* Meyer, *P. modesta* Schlegel). Assuming the monophyly of the four species in *Psittacella*, nevertheless, Joseph *et al.* (2011) found that *Psittacella* is not closely related to either the platycercine or psittaculine parrots but instead appears to be the sole extant representative of an early divergence within Subgroup 3A, itself a predominantly Australo-Papuan radiation and of which platycercines are a part. Schweizer *et al.* (2011) found it to be sister to the platycercine parrots but with weak support. Accordingly, we recommend that it be assigned subfamily rank to reflect these results.

In the case of *Pezoporus*, Joseph *et al.* (2011) reinforced a growing body of work based on molecules and morphology in showing that it is not closely related to the superficially similar Budgerigar *Melopsittacus undulatus*

(Shaw) (see Mayr 2008, 2010). They affirmed that it forms a clade with *Neophema* Salvadori and *Neopsephotus* Mathews within Subgroup 3A (also Miyaki *et al.* 1998). Together, these three last-named genera are sister to the “core” platycercines: *Platycercus* Vigors, *Barnardius* Bonaparte, *Purpureicephalus* Bonaparte, *Psephotus* Gould (including *Psephotellus* Mathews), *Northiella* Mathews, *Lathamus* Lesson, *Cyanoramphus* Bonaparte, *Eunymphicus* J.L. Peters and *Prosopieia* Bonaparte. We recommend that these two sister groups be accorded tribal rank within one subfamily.

Also within Subgroup 3A, the Budgerigar *Melopsittacus* is now understood to be part of a robustly supported clade that it forms with the *ca* 54 species of Australo-Papuan and Pacific Ocean lories and lorikeets and the 5 species of Australo-Papuan fig-parrots of the genera *Cyclopsitta* Reichenbach and *Psittaculirostris* J.E. & G.R. Gray (Wright *et al.* 2008; Schweizer *et al.* 2010). For ease of discussion, we term this group the LBF assemblage within Subgroup 3A.

Mayr (2008) recognized the LBF assemblage together with the *ca* 10 species of Papuo-Malesian hanging-parrots *Loriculus* Blyth spp., the 6 species of Papuan pygmy-parrots *Micropsitta* Lesson spp., and the 9 species of African lovebirds *Agapornis* Selby spp. as a subfamily. Molecular data (Wright *et al.* 2008; Schweizer *et al.* 2010; Joseph *et al.* 2011) consistently show that *Micropsitta* is neither a member of this group nor sister to it, and, indeed, that it falls in Subgroup 3B, entirely outside Subgroup 3A. Mayr (2010) later noted that convergent evolution may have affected the similarities between *Micropsitta* and the LBF assemblage in hypotarsal morphology. The molecular data also show that the LBF assemblage is sister to a) *Agapornis-Loriculus*, and its sister group monotypic *Bolbopsittacus* Salvadori (see Wright *et al.* 2008; Joseph *et al.* 2011), which Mayr (2008, 2010) was unable to examine. We suggest, from the consensus of these studies, that (1) the LBF assemblage forms one subfamily with three tribes for the lories, budgerigar and fig-parrots respectively, (2) the *Agapornis-Loriculus* clade forms another subfamily, and (3) *Micropsitta* is not part of this complex.

For Subgroup 3B, the molecular analyses agree in recovering two clades: (1) *Alisterus* Mathews, *Aprosmictus* Gould, *Polytelis* Wagler, and (2) *Psittacula* Cuvier (for its monophyly see Groombridge *et al.* 2004), *Eclectus* Wagler, *Geoffroyus* Bonaparte, *Tanygnathus* Wagler, *Prioniturus* Wagler and *Psittinus* Blyth. They also recover *Micropsitta* as a separate lineage not embedded within either of the two clades just listed; further, four studies (Wright *et al.* 2008; Schweizer *et al.* 2010, 2011; Joseph *et al.* 2011), which have the most extensive taxon and nucleotide sampling to date, agree that it is sister to the other two clades. We recommend subfamily rank for Group 3B, and tribal rank for each of *Micropsitta* and the two clades labelled as (1) and (2). Although *Prioniturus* consistently emerges as sister to other genera in clade (2), species-level sampling in that group has been limited to date such that further tribal subdivision seems unjustified until taxon sampling is more complete.

Nomenclature: valid family-group names

To determine the correct names for the re-groupings of parrots and cockatoos advocated here, we have taken our lead from Bock's (1994) thorough compilation of avian family-group names. We reviewed his findings against the regulations of the current edition of the International Code of Zoological Nomenclature (ICZN 1999), hereafter the Code, which take precedence over regulations in previous editions (Art. 86.3). Several names have been found to be *nomina nuda*, published in the last several decades without description (Art. 13.1 of the Code). Bock (*l.c.*) also routinely replaced senior family-group names with junior names wherever the type genus of the senior name had been synonymised before 1961. This action sometimes conflicts with Art. 40.2 of the Code which rules that such replacement must also be “in prevailing usage” to be valid. Fortunately, the definition of ‘prevailing use’ in the Code (Art. 89.1 and Glossary) is sufficiently flexible to allow common sense to enter into such decisions, so that long-accustomed names are not upset. In applying prevailing usage here, we have taken our cue from usage in the following mainstream works: Peters (1937); Mathews (1946); Verheyen (1956); Boetticher (1959); Condon (1975); Smith (1975); Wolters (1975); Forshaw (1978, 1981, 1989, 2002); Homberger (1980, 2003); Howard and Moore (1980); Campbell and Lack (1985); Bock (1994); Christidis and Boles (1994, 2008); Collar (1997); Rowley (1997); Schodde (1997a,b); Wells (1998); Higgins (1999); Dickinson (2003); de Kloet and de Kloet (2005); Astuti *et al.* (2006); ITIS (2006); Tokita *et al.* (2007); Mayr (2008, 2010); Wright *et al.* (2008); Gill *et al.* (2010); Schweizer *et al.* (2010, 2011); Wikipedia (2010, 2011a,b); Joseph *et al.* (2011); White *et al.* (2011). These works together are termed the “current usage references” in discussion below.

Numbered Articles or “Art(s).” in the following text refer to articles of regulation in the current 4th edition of the Code (ICZN 1999), unless specified otherwise.

1. Superfamily- and family-rank names in contention

The valid name for a superfamily comprising the Nestoridae Bonaparte and Strigopidae Bonaparte is Strigopoidea, not Nestoroidea, *contra* Christidis and Boles (2008). Its authorship has also been wrongly attributed to “G.R. Gray 1848” by Gill *et al.* (2010) due to a misreading of the title page of Gray’s (1859) treatment of parrots in his *List of the Specimens of Birds in the British Museum*. Bonaparte (1849) published the family-group names Nestorinae and Strigopinae simultaneously (Bock 1994), and there included both within the nominated family Strigopidae, which takes automatic precedence at the next higher rank (Art. 24.1). Preference for Nestoroidea over Strigopoidea under provisions for prevailing usage is not an option because both names are equally in use (cf. Christidis & Boles 2008; Gill *et al.* 2010).

The name Psittacidae was first published by Illiger (1811, p. 200), but Bock (1994, p. 140) attributed it to Rafinesque-Schmaltz (1815, p. 64) instead. Illiger (*l.c.*) may have laid the foundations for family-group taxonomy in birds (Stresemann 1975; Bock 1994, pp. 17–18), but the International Commission on Zoological Nomenclature (1987, 2001) has never recognized his family group names nomenclaturally, probably because, as pointed out by Bock (*l.c.*), they were used as Latinized descriptors and not based centrally on an included (type) genus (Art. 29). Rafinesque-Schmaltz’s names have much the same problems (Bock *l.c.*), yet the Commission has consistently accepted them (*ll. cc.*). Although Illiger’s careful work presented the “Familia.Psittacini”, first genus *Psittacus* Linnaeus, with more formality than did Rafinesque-Schmaltz (“famille.Psittacea” with *Psittacus* Linnaeus again as first genus), we consider it prudent to follow Bock (*l.c.*). To do otherwise could create a precedent that would likely precipitate many Illiger-authored family-group names to disturb the literature, at the risk of rejection from the Commission.

Spellings of the name for Pesquet’s Parrot *Psittrichas fulgidus* (Lesson) and Madagascan Vasas *Coracopsis* spp., either Psittrichasidae from the full generic name *Psittrichas* or Psittrichadidae from its stem, are in conflict. Art. 29.1 of the Code (ICZN 1999) admits family-group names formed from either the stem of the type genus or its entire name. Because the emendation using the stem, Psittrichadidae, is not convincingly in prevailing use—11 uses to 3 of Psittrichasidae in the current usage references quoted above—we accept the original spelling Psittrichasidae of Boetticher (1959) which uses the full generic name (Arts. 23.5, 32.3). Yet there is a further issue to resolve. Psittrichasidae is junior to Dasyptilidae Bonaparte, 1854, type genus *Dasyptilus* Wagler, 1832, a junior synonym of *Psittrichas* Lesson, 1831. Even so, Psittrichasidae was introduced in place of Dasyptilidae before 1961 (Boetticher 1959, p. 13) and is in sole use today: 14 uses of Psittrichasidae/Psittrichadidae in the current usage references compared with none of Dasyptilidae since 1899. Accordingly, Psittrichasidae Boetticher, 1959 is accepted here under Art. 40.2 (also Bock 1994, p. 184).

For the family that includes the platycercine, loriine and psittaculine groups of Australo-Asian parrots (Group 3 in Fig. 1), there are two simultaneously published senior names: Psittaculidae Vigors, 1825 (as Psittaculina) and Palaeornithidae Vigors, 1825 (as Palaeornina) (Vigors 1825, p. 400). The first is in prevailing use, in 22 of the current usage references quoted above, compared with only 1 of Palaeornithidae (Condon 1975). Psittaculidae has been presumed to be based on *Psittacula* Cuvier, 1800 (type species *Psittacus alexandri* Linnaeus, 1758, designated by Mathews 1917, p. 169) which has priority over its objective synonym *Palaeornis* Vigors, 1825 (type species *Psittacus alexandri* Linnaeus, 1758 by original designation). Psittaculidae was also given precedence over Palaeornithidae by Bock (1994, p. 140) as first reviser under Art. 24.2. Nevertheless, Psittaculidae is misapplied here, Vigors (1825, p. 400) having originally based it on “*Psittacula*. Kuhl” (= Kuhl 1820, pp. 8–9), not *Psittacula* Cuvier. Kuhl’s concept of *Psittacula*, consistent with 19th century perceptions, embraced small, short tailed parrots of the global tropics, including Neotropical genera (e.g. *Forpus*, *Brotogeris*, *Touit*, *Pyrilia* Bonaparte and *Pionopsitta* Bonaparte) and Old World genera (e.g. *Agapornis*, *Loriculus* and *Vini* Lesson); the larger long-tailed parrots of *Psittacula* Cuvier were explicitly excluded. As directed by Art. 65.2.1, we have referred the case to the International Commission on Zoological Nomenclature for resolution, recommending that it take action to conserve Psittaculidae Vigors in its 20th–21st century usage (Schodde *et al.*, submitted). In the interim, we employ the in-use name Psittaculidae for Group 3 parrots, following Art. 82.1.

2. Subfamily- and tribe-rank names in contention

Within Cacatuidae, the name for the tribe comprising the Palm Cockatoo (*Probosciger*) is unsettled. The senior name, Microglossini, was published available by Bonaparte in 1853 by indication (Arts. 11.7.1, 12.2.4), based on the then widely-used generic name *Microglossus* Vieillot, 1822 (Bonaparte 1853, table). This generic name has since been found junior to the now in-use and valid name *Probosciger* Kuhl, 1820. Mathews introduced Proboscigerini (as Proboscigeridae) in place of Microglossini in 1916 (Mathews 1916, p. 8), subjecting the latter to potentially permanent replacement under Art. 40.2 were Proboscigerini now in prevailing use. In the current usage references cited above, we have found just three preferential usages of Proboscigerini and two of Microglossini over the last 50 years. Proboscigerini thus does not have significant currency, and so Microglossini should stand (Art. 40; cf. Bock 1994, p. 184).

For the Neotropical parrots, the presumed correct subfamily name Arinae G.R. Gray, 1840 was originally spelled Arainae (Gray 1840, p. 51), formed from its type genus *Ara* Lacépède, 1799. Thus its spelling is open to the same complexities of interpretation under Art. 29.1 as Psittichasidae/Psittichadidae. The spelling Arinae is today in prevailing use, in 15 of the current usage references compared with only 1 of Arainae. If, therefore, Arainae is considered to be a correct original spelling, and Arinae an incorrect subsequent spelling, Arinae is protected under Article 33.3.1 because it is in prevailing use. If, alternatively, its type genus is interpreted as a latinized noun with the stem of “Ar”—as is conventional (cf. Art. 26)—then Arinae is correctly formed under Arts. 26, 11.7.1 and 29.3. Then again, if *Ara* is derived from the French vernacular “Ara” for the macaws, after Brisson (1760) and Buffon (1779), as is likely, the spelling Arinae is still protected, in this case by Art. 29.5 (cf. Art. 29.3.3). Yet there is a further problem. Arinae is another junior family-group name that has been adopted because its type genus, *Ara* Lacépède, 1799, is valid and senior to one (*Macrocerus* Vieillot, 1816) on which an older family-group name has been based: Macrocerinae Vigors, 1825 (Vigors 1825, p. 400, as Macrocerina). G.R. Gray (*l.c.*) replaced Macrocerinae with Arinae in 1840, and Arinae today is in prevailing use: compared with its 15 usages (quoted above) we have found none of Macrocerinae in current usage references. Accordingly we employ Arinae G.R. Gray, 1840 (Art. 40.2; also Bock 1994, p. 183).

Androglossini Sundevall (1872, p. 69), which we use here for the “short-tailed” tribe of South American parrots, was based on *Androglossus* Vigors (Vigors 1825, p. 400), a *nomen nudum*. Sundevall nevertheless validated the tribal name by simultaneously treating *Androglossus* as valid (Art. 11.7.1.1) and making it available by reference to two available specific names, *Psittacus amazonica* Linnaeus, 1766 and *P. aestiva* Linnaeus, 1758, now in the genus *Amazona* Lesson (Art. 12.2.5). *Androglossus* Sundevall, 1872 is junior to other generic names in the short-tailed amazon group, but the family-group name based on it is senior to all others in its tribe (Bock 1994). Even though Androglossinae has not been used since 1872, it should stand because no other family-group name formed from a senior genus (e.g. Chrysotini Garrod, 1874 (*Chrysotis* Swainson, 1837), Pionini Reichenow, 1881 (*Pionus* Wagler, 1832) and Amazonini Mathews & Iredale, 1920 (*Amazona* Lesson, 1830)) has had significant usage in the last 100 years (Art. 40; cf. Bock 1994, p. 183).

Coracopinae (sic) Wolters, 1975, based on *Coracopsis* Wagler, 1832 and the only published family-group name for the Madagascan vasa parrots, lacks a supporting description or reference to one (Wolters 1975, p. 62). Having been published after 1930, it is thus a *nomen nudum* and unavailable (Art. 13.1). Therefore, we propose as new here:

Coracopseinae Joseph, Toon, Schirtzinger, Wright & Schodde—subfam. nov. Medium-sized, plain dark grey-brown parrots with truncated bodies, long necks, medium-length round tails, dusky-pink bills with large exposed ceres, and without psittacid blue-and-green ‘Dyck texture’ colouring their plumage; mating system polyandrous, males with erectile cloacal hemipenis, copulation protracted due to copulatory tie, breeding females with orange-yellow skin under partly-shed head plumage and giving complex songs at nest for attraction and to stimulate courtship feeding by males. Type genus: *Coracopsis* Wagler, 1832.

The spelling Coracopseinae is formed here from the stem of the name of the type genus under Arts. 29.1 and 29.3, on the assumption that it is a Greek compound (Art. 26). Should Kundu *et al.*'s (2012) finding that extinct, monotypic *Mascarinus* is embedded within *Coracopsis* be confirmed (see above), *Mascarinus* Lesson, 1831 will take precedence over *Coracopsis* Wagler, 1832 as the generic name for the group but not for the family-group name because *Mascarinus* is not accepted here as valid for the coracopseine parrots (Arts. 11.7.1.1, 40.1).

Among the Australasian parrots of Subgroup 3A, the monogeneric subfamily represented by *Psittacella*, the tiger parrots of montane New Guinea, was first recognised and published by Wolters (1975, p. 55). Nevertheless, Wolters again provided neither a description nor a reference to one, and his Psittacellinae, published after 1930, is thus a *nomen nudum* and unavailable (Art. 13.1). Accordingly, we propose here:

Psittacellinae Joseph, Toon, Schirtzinger, Wright & Schodde, subfam. nov. Small to medium, stocky, short-tailed parrots with yellow and blackish barring on green body plumage and contrasting plain red crissa, no pale remigial bar, non-pericyclic iris and finely structured pale grey bills; non-flocking and docile; quiet, with melodious or hoarse calls; mating system apparently monogamous. Type genus: *Psittacella* Schlegel, 1871.

The spelling Psittacellinae is formed here from the stem of the name of the type genus under Arts. 29.1 and 29.3, on the assumption that it is a Greek and Latin compound (Art. 26).

Although Loriinae Selby, 1836, conserved by ICZN Opinion 938, is the senior and valid name for the LBF assemblage at subfamily rank in Subgroup 3A, an alternative name, Loricoloriinae, was proposed for it recently by Mayr (2008) and accepted by Schweizer *et al.* (2011). Loricoloriinae was apparently formed by combining senior generic names in its component tribes, namely *Loriculus* Blyth, 1850 and *Lorius* Vigors, 1825, although no explanation was offered. Under the Code, such a name is improper and unavailable because family-group names must be formed from one available included nominal genus only, which then serves as the type genus for carrying the name (Arts. 11.7, 29.1, 63).

Within the Loriinae, the tribal name for the fig-parrots, Cyclopsittini, was introduced at family rank in the spelling Cyclopsittacidae (Salvadori 1891, p. 86). It was formed from the stem of the name of its type genus, *Cyclopsitta* Reichenbach, 1850, a spelling that Salvadori (1891, p. 88) cited and at the same time emended unjustifiably to *Cyclopsittacus* (Schodde 1997b, p. 202). Although the emended stem “Cyclopsittac” has some currency for this family-group name (e.g. Bock 1994; Collar 1997; Schodde 1997b; Wright *et al.* 2008; Schweizer *et al.* 2010), the original stem “Cyclopsitt” has also been used recently (e.g. Christidis & Boles 2008; Mayr 2008). Thus the emended spelling “Cyclopsittac” is not convincingly in prevailing use (cf. Arts. 29.5, 33.2.3.1). In these circumstances, we use the original stem of the type genus, “Cyclopsitt”, from the feminine Greek “Psitta” (e.g. Table 2, Appendix D in ICZN 1985), in accord with Arts. 29.3, 32.5.3.2 and 35.4.1 of the 4th edition of the Code (ICZN 1999). Bock (1994, p. 183), incidentally, accepted Opopsittini Mathews, 1912 for this tribe (type genus *Opopsitta* P.L. Sclater, 1860) in the belief that generic names based on *Cyclopsitta* Reichenbach, 1850 had been synonymised. *Cyclopsitta* has since been shown, nevertheless, to be the correct name for the small, bare-cered fig parrots (Schodde 1997b, p. 202); and Opopsittini does not appear to have been taken up other than by Mathews (e.g. Mathews 1946).

For the subfamily comprising *Agapornis* Selby, 1836 and *Loriculus* Blyth, 1850, Agapornithinae Salvin, 1882 is the senior name. Should *Loriculus* itself be separated as a monogeneric tribe within Agapornithinae, the name Loriculini Verheyen, 1956 is available for it. Although Loriculini currently dominates Agapornithinae in usage (8 to 1 in the current usage references cited above), it falls well short of the requirements needed under Art. 23.9 to replace the latter when the two are included within one tribe.

Issues of spelling and precedence affect the names for two of the tribes of Psittaculinae. Polytelini Mathews, 1916, the senior name for the Australo-Papuan long-tailed parrots, was originally published as a family in the spelling Polytelitidae (Mathews 1916, p. 8). Here the stem—“Polytelit”—contravenes Arts. 29.1 and 29.3 because the name of the type genus *Polytelis* Wagler was formed explicitly from the Greek Πολυτελης, meaning exquisite (Wagler 1832, p. 489). The stem of Greek compounds derived from nominative endings in “es” terminates at the penultimate consonant, viz. “Polytel” (e.g. Table 2, Appendix D in ICZN 1985). Thus a tribal name based on *Polytelis* becomes Polytelini (Arts. 11.7.1, 29.3). Except for Condon (1975), almost all authors since Mathews have elided the “it” (Wolters 1975; Bock 1994; Schodde 1997b; Higgins 1999; Christidis & Boles 2008); and so the spelling is corrected here as well (Arts. 32.5.3.2, 35.4.1; cf. Art. 29.5).

When introduced, the name for the final tribe, Micropsittini, was based on a generic name not treated as valid (Reichenow 1881, pp. 135–144). Thus it is there unavailable (Arts. 11.7.1.1, 64). Moreover, it is junior to Nasiternini Bonaparte, 1853 (published as Nasiterninae). Micropsittini appears to have first become available in Mathews (1927, p. 319), but in the spelling Micropsittacidae. This is an incorrectly formed family-group name under Arts.

23.1 and 23.3, given that its type genus, *Micropsitta* Lesson, 1831, is a Greek compound (Art. 26) and that its stem is “Micropsitt” from the feminine Greek “Psitta” (e.g. Table 2, Appendix D in ICZN 1985). Mathews’ spelling was used also by Reichenow (1881), but it has apparently not been taken up since. All 15 spellings that we have found in the current usage references cited above employ the stem “Micropsitt”, in accord with Arts. 29.3, 32.5.3.2 and 35.4.1 of the Code. Nasiternini itself, even though senior, should be replaced by Micropsittini because of two criteria in Art. 40.2. First, Nasiternini was replaced by Micropsittini before 1961 (i.e., in 1927) because its type genus, *Nasiterna* Wagler, 1832, had been synonymised under *Micropsitta* Lesson, 1831 (Mathews 1927, p. 319). Secondly, Micropsittini, though junior, is clearly in prevailing use today—we have recorded 15 uses to none of Nasiternini in the current usage references quoted above. Accordingly, we keep Micropsittini here (Art. 40.2).

Conspectus of psittaciform family groups

Applying the above nomenclatural information to the taxonomic groupings identified in the systematic analyses, we recommend the following classification for parrots and cockatoos. Fig. 2 sets out the rationale for how we have assigned ranks to groupings according to the consensus view of phylogenetic and temporal depths of divergences across Psittaciformes, as outlined above. Component genera of family groups are drawn from Dickinson (2003) and their sequence from molecular data in Miyaki *et al.* (1998), de Kloet and de Kloet (2005), Astuti *et al.* (2006), Tokita *et al.* (2007), Wright *et al.* (2008), Schweizer *et al.* (2010, 2011), Joseph *et al.* (2011) and White *et al.* (2011). Table 1 summarizes the detailed conspectus given below.

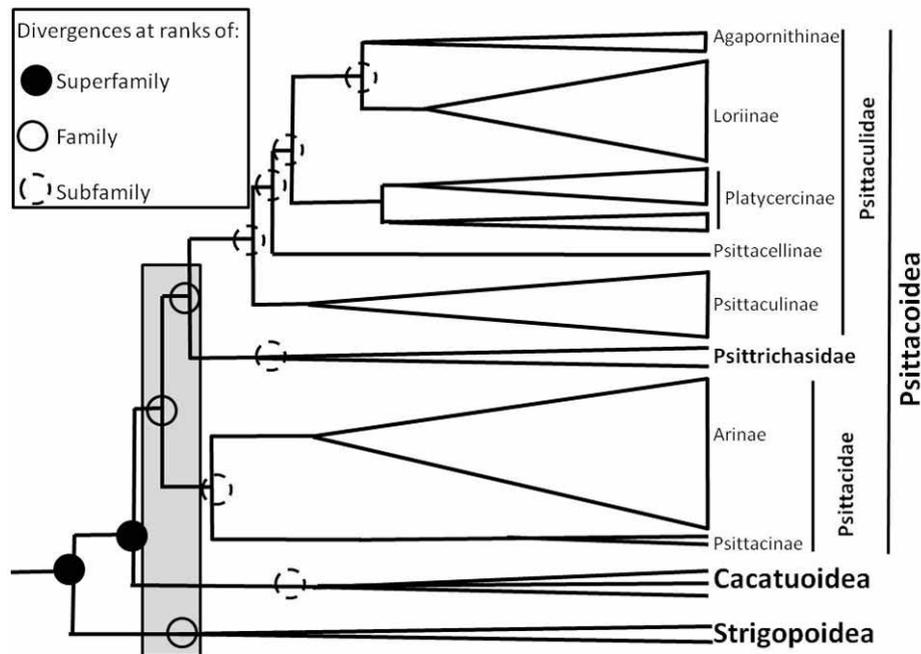


FIGURE 2. Tree of psittaciform relationships to show rationale we have used for assigning family-group ranks from superfamily to tribe in our recommended classification (see text). The tree is based on Figure 3b in Wright *et al.* (2008), which was built on a calibration at 82 mya of the basal divergence between New Zealand endemics *Nestor* and *Strigops*, here termed the Strigopoidea, and the remaining psittaciforms. Debate over this calibration does not affect the topology of the tree, which most readily conveys the basis for our choice of rankings. The topology has been updated according to Joseph *et al.* (2011), White *et al.* (2011) and Schweizer *et al.* (2011). Superfamily level divergences are indicated by solid circles (●) (note that one divergence event generates at least two taxa), empty circles with unbroken lines (○) indicate family level divergences, and circles with broken lines indicate divergences recognized at levels of subfamily. For clarity, divergences into tribes within subfamilies are omitted (see text and Table 1). The box emphasizes agreement in various studies that family level divergences across the phylogeny occurred rapidly.

TABLE 1. Proposed taxonomic organization for the Order Psittaciformes.

Superfamily	Family	Subfamily	Tribe	Component Genus/Genera	
Strigopoidea	Strigopidae			<i>Strigops</i>	
	Nestoridae			<i>Nestor</i> , † <i>Nelepsittacus</i>	
Cacatuoidea	Cacatuidae	Nymphicinae		<i>Nymphicus</i>	
		Calyptorhynchinae		<i>Calyptorhynchus</i>	
		Cacatuinae	Microglossini	<i>Probosciger</i>	
			Cacatuini	<i>Callocephalon</i> , <i>Eolophus</i> , <i>Lophochroa</i> , <i>Cacatua</i>	
Psittacoidea	Psittacidae	Psittacinae		<i>Psittacus</i> , <i>Poicephalus</i>	
		Arinae	Arini	<i>Anodorhynchus</i> , <i>Ara</i> , <i>Cyanopsitta</i> , <i>Primolius</i> , <i>Orthopsittaca</i> , <i>Diopsittaca</i> , <i>Rhynchopsitta</i> , <i>Ognorhynchus</i> , <i>Leptosittaca</i> , <i>Guaruba</i> , <i>Aratinga</i> , <i>Pyrrhura</i> , <i>Nandayus</i> , <i>Cyanoliseus</i> , <i>Enicognathus</i>	
			Androglossini	<i>Pionopsitta</i> , <i>Pyrilia</i> , <i>Graydidascalus</i> , <i>Alipiopsitta</i> , <i>Pionus</i> , <i>Amazona</i> , <i>Tricharia</i>	
			<i>Incertae sedis</i>	<i>Forpus</i> , <i>Pionites</i> , <i>Deroptyus</i> , <i>Hapalopsittaca</i> , <i>Touit</i> , <i>Brotogeris</i> , <i>Bolborhynchus</i> , <i>Psilopsiagon</i> , <i>Myiopsitta</i> , <i>Nannopsittaca</i>	
		Psittrichasidae	Psittrichasinae		<i>Psittrichas</i>
			Coracopseinae		<i>Coracopsis</i>
		Psittaculidae	Platycercinae	Platycercini	<i>Barnardius</i> , <i>Platycercus</i> , <i>Purpureicephalus</i> , <i>Psephotus</i> , <i>Northiella</i> , <i>Lathamus</i> , <i>Prosopiea</i> , <i>Eunymphicus</i> , <i>Cyanoramphus</i>
				Pezoporini	<i>Pezoporus</i> , <i>Neopsephotus</i> , <i>Neophema</i>
			Psittacellinae		<i>Psittacella</i>
			Loriinae	Loriini	<i>Oreopsittacus</i> , <i>Chamosyna</i> , <i>Vini</i> , <i>Phigys</i> , <i>Neopsittacus</i> , <i>Glossopsitta</i> , <i>Lorius</i> , <i>Psitteuteles</i> , <i>Pseudeos</i> , <i>Chalcopsitta</i> , <i>Eos</i> , <i>Trichoglossus</i>
				Melopsittacini	<i>Melopsittacus</i>
				Cyclopsittini	<i>Psittaculirostris</i> , <i>Cyclopsitta</i>
			Agapornithinae		<i>Bolbopsittacus</i> , <i>Loriculus</i> , <i>Agapornis</i>
			Psittaculinae	Polytelini	<i>Alisterus</i> , <i>Aprosmictus</i> , <i>Polytelis</i>
				Psittaculini	<i>Eclectus</i> , <i>Geoffroyus</i> , <i>Tanygnathus</i> , <i>Psittinus</i> , <i>Psittacula</i> , <i>Prioniturus</i>
				Micropsittini	<i>Micropsitta</i>
<i>Incertae sedis</i> † <i>Mascarinus</i> , † <i>Necropsittacus</i> , † <i>Lophopsittacus</i>					

Superfamily Strigopoidea Bonaparte, 1849, *Conspectus Systematis Ornithologiae*, table. M. Westerman et fil., Amsterdam (as Strigopidae; available by indication: Arts. 11.7.1.1, 12.2.4; valid by precedence of rank: Art. 24.1)—type genus *Strigops* G.R. Gray, 1845 (conserved by ICZN Opinion 67)

Family Strigopidae (component genus: *Strigops* G.R. Gray)

Family Nestoridae Bonaparte, 1849, *Conspectus Systematis Ornithologiae*, table. Westerman et fil., Amsterdam (as Nestorinae; available by indication: Arts. 11.7.1.1, 12.2.4; valid as sole name)—type genus *Nestor* Lesson, 1830 (component genera (*Nestor*, †*Nelepsittacus* Worthy, Tennyson & Scofield 2011)

Superfamily Cacatuoidea G.R. Gray, 1840, *A List of the Genera of Birds*, with an indication of the typical species of each genus, p. 53. R. & J.E. Taylor, London (as Cacatuinae; conserved by ICZN Opinion 1949)—type genus *Cacatua* Vieillot, 1817 (conserved by ICZN Opinion 1949)

Family Cacatuidae

Subfamily Nymphicinae Bonaparte, 1857, Remarques á propos des observations de M. Emile Blanchard sur les caractères ostéologiques chez les oiseaux de la famille des psittacidés. *Compt. Rend. Acad. Sci., Paris* 44: 536 (as Nymphicidae; available by indication: Art. 12.2.4; valid by priority: Arts. 23.1)—type genus *Nymphicus* Wagler, 1832 (component genus: *Nymphicus* Wagler)

Subfamily Calyptorhynchinae Bonaparte, 1853, Classification ornithologique par séries. *Compt. Rend. Acad. Sci., Paris* 37: 644 (as Calyptorhynchinae; available by indication: Arts. 11.7.1.1, 12.2.4; valid as sole name)—type genus *Calyptorhynchus* Desmarest, 1826 (component genus: *Calyptorhynchus* Desmarest (including *Zanda* Mathews))

Subfamily Cacatuinae

Tribe Microglossini Bonaparte, 1853, Classification ornithologique par séries. *Compt. Rend. Acad. Sci., Paris* 37: 644—table (as Microglossinae, available by indication: Arts. 11.7.1.1, 12.2.4; valid by priority with junior type genus: Art. 40.1)—type genus *Microglossus* Vieillot, 1822 = *Probosciger* Kuhl, 1820 (component genus: *Probosciger* Kuhl)

Tribe Cacatuini (component genera: *Callocephalon* Lesson, *Eolophus* Bonaparte, *Lophochroa* Bonaparte, *Cacatua* Vieillot)

Superfamily Psittacoidea Rafinesque-Schmaltz, 1815, *Analyse de la Nature* ou Tableau de l'Univers et des Corps organisés, p. 64. C.S. Rafinesque-Schmaltz, Palerme (as “famille.Psittacea”, corrected under Art. 32.5.3.1; available by indication: Arts. 11.7.1.1, 12.2.4; valid by priority: Art. 23.1)—type genus *Psittacus* Linnaeus, 1758 (conserved by ICZN Opinion 67)

Family Psittacidae

Subfamily Psittacinae (component genera: *Psittacus* Linnaeus, *Poicephalus* Swainson)

Subfamily Arinae G.R. Gray, 1840 (1825), *A List of the Genera of Birds*, with an indication of the typical species of each genus, p. 51. R. & J.E. Taylor, London (as Arinae, corrected under Arts. 11.7.1.1 and 29.3 or Arinae maintained under Arts. 29.5 or 33.3.1; available by indication: Art. 12.2.4; valid by substitution in prevailing use (Art. 40.2), replacing *Macroercinae* Vigors, 1825)—type genus *Ara* Lacépède, 1799

Tribe Arini (component genera: *Anodorhynchus* Spix, *Ara* Lacépède, *Cyanopsitta* Bonaparte, *Primolius* Bonaparte, *Orthopsittaca* Ridgway, *Diopsittaca* Ridgway, *Rhynchopsitta* Bonaparte, *Ognorhynchus* Bonaparte, *Leptosittaca* Berlepsch & Stolzmann, *Guaruba* Lesson, *Aratinga* Spix, *Pyrhura* Bonaparte, *Nandayus* Bonaparte, *Cyanoliseus* Bonaparte, *Enicognathus* G.R. Gray)

Tribe Androglossini Sundevall, 1972, *Methodi Naturalis Avium Disponendarum Tentamen*, p. 69. Samson & Wallin, Stockholm (as “Fam. 2. Androglossini”, corrected under Art. 32.5.3.1; available by indication: Art. 12.2.4; valid by priority with junior type genus: Art. 40.1)—type genus: *Androglossus*

Sundevall, 1972 (component genera: *Pionopsitta* Bonaparte, *Pyrilia* Bonaparte, *Graydidascalus* Bonaparte, *Alipiopsitta* Caparroz & Pacheco, *Pionus* Wagler, *Amazona* Lesson, *Triclarina* Wagler)

Genera incertae sedis: *Forpus* Boie, *Pionites* Heine, *Deroptyus* Wagler, *Hapalopsittaca* Ridgway, *Touit* G.R. Gray, *Brotogeris* Vigors, *Bolborhynchus* Bonaparte, *Psilopsiagon* Ridgway, *Myiopsitta* Bonaparte, *Nannopsittaca* Ridgway

Family Psittichasidae Boetticher, 1959 (1854), Papageien, p. 13. Neue Brehm Bücherei. Ziemsen, Wittenburg-Lutherstadt (as Psittichasinae, original spelling of entire generic name retained against the stem “Psittichad”: Art. 291; available by description: Art. 13.1.1; valid by substitution in prevailing use (Art. 40.2), replacing Dasyptilinae Bonaparte, 1854)—type genus *Psittichas* Lesson, 1831

Subfamily Psittichasinae (component genus: *Psittichas* Lesson)

Subfamily Coracopseinae Joseph, Toon, Schirtzinger, Wright & Schodde, *this work* (name formed from stem of name of type genus: Art. 29.3)—type genus *Coracopsis* Wagler, 1832 (component genus: *Coracopsis* Wagler)

Family Psittaculidae Vigors, 1825, On the arrangement of the genera of birds. *Zool. J.* 2: 400 (as subfam. Psittaculina, corrected under Art. 32.5.3.1; available by indication: Art.12.2.4; validity under application to ICZN, name employed under Art. 82.1)—type genus *Psittacula* Cuvier, 1800, *nec* Kuhl, 1820

Subfamily Platycercinae Selby, 1836, The Natural History of Parrots, p. 57. In W. Jardine, ed., *The Naturalist's Library*, vol. VI, Parrots. W.H. Lizars, Edinburgh (as subfamily Platycercina, corrected under Art. 32.5.3.1; available by indication: Art. 12.2.4; valid by priority: Art. 23.1)—type genus *Platycercus* Vigors, 1825 (conserved by ICZN Opinion 67)

Tribe Platycercini (component genera: *Barnardius* Bonaparte, *Platycercus* Vigors, *Purpureicephalus* Bonaparte, *Psephotus* Gould (including *Psephotellus* Mathews), *Northiella* Mathews, *Lathamus* Lesson, *Prosopeia* Bonaparte, *Eunymphicus* J.L. Peters, *Cyanoramphus* Bonaparte).

Tribe Pezoporini Bonaparte, 1837, Synopsis vertebratorum systematis. *Nuovi Annali delle Scienze naturale, Bologna* ser.1, 2: 116 (as Pezoporinae; available by indication: Arts. 11.7.1.1, 12.2.4; valid by priority: Art. 23.1)—type genus *Pezoporus* Illiger, 1811 (conserved by ICZN Opinion 67)—(component genera: *Neophema* Salvadori, *Neopsephotus* Mathews, *Pezoporus* Illiger).

Subfamily Psittacellinae Joseph, Toon, Schirtzinger, Wright & Schodde, *this work* (name formed from stem of name of type genus: Art. 29.3)—type genus *Psittacella* Schlegel, 1871 (component genus: *Psittacella* Schlegel)

Subfamily Loriinae Selby, 1836, The Natural History of Parrots, p. 57, 141,142. In W. Jardine, ed., *The Naturalist's Library*, vol. VI, Parrots. W.H. Lizars, Edinburgh (as subfamily Loriana and Lorianae; spelling Loriinae (as Loriidae) conserved by ICZN Opinion 938)—type genus *Lorius* Vigors, 1825 (conserved by ICZN Opinion 938)

Tribe Loriini (component genera: *Oreopsittacus* Salvadori, *Charmosyna* Wagler, *Vini* Lesson, *Phigys* G.R. Gray, *Neopsittacus* Salvadori, *Glossopsitta* Bonaparte, *Lorius* Vigors, *Psitteuteles* Bonaparte, *Pseudeos* Peters, *Chalcopsitta* Bonaparte, *Eos* Wagler, *Trichoglossus* Vigors & Horsfield)

Tribe Melopsittacini Bonaparte, 1857, *Remarques á propos des observations de M. Emile Blanchard sur les caractères ostéologiques chez les oiseaux de la famille des psittacidés*. *Compt. Rend. Acad. Sci., Paris* 44: 536 (as Melopsittacinae; available by indication: Art. 12.2.4; valid as sole name)—type genus *Melopsittacus* Gould, 1840 (component genus: *Melopsittacus* Gould)

Tribe Cyclopsittini Salvadori, 1891, *Catalogue of Birds in the British Museum*. *Catalogue of the Psittaci, or Parrots*, p. 86. British Museum, London (as Cyclopsittacidae, corrected under Arts. 32.5.3.2 and 35.4.1; available by description: Art. 12.1; valid by priority: Art. 23.1)—type genus *Cyclopsitta* Reichenbach, 1850 (component genera: *Psittaculirostris* J.E. & G.R. Gray, *Cyclopsitta* Reichenbach)

Subfamily Agapornithinae Salvin, 1882, *A Catalogue of the Collection of Birds formed by the late Hugh Edwin Strickland, M.A.*, p. 460. University Press, Cambridge (as Agapornithinae; available by indication: Art. 12.2.4; valid by priority: Art. 23.1)—type genus *Agapornis* Selby, 1836 (component genera: *Bolbopsittacus* Salvadori, *Loriculus* Blyth, *Agapornis* Selby)

Subfamily Psittaculinae

Tribe Polytelini Mathews, 1916, *The Birds of Australia*, vol. 6, p. 8. Witherby & Co., London (as Polytelitidae, corrected under Arts. 32.5.3.2 and 35.4.1; available by indication: Art. 12.2.4; valid by priority: Art. 23.1)—type genus *Polytelis* Wagler, 1832 (component genera: *Alisterus* Mathews, *Aprosmictus* Gould, *Polytelis* Wagler)

Tribe Psittaculini (component genera: *Ecleetus* Wagler, *Geoffroyus* Bonaparte, *Tanygnathus* Wagler, *Psittinus* Blyth, *Psittacula* Cuvier, *Prioniturus* Wagler)

Tribe Micropsittini Mathews, 1927 (1853), *Systema Avium Australasianarum*, p. 319. British Ornithologists' Union, London (as Micropsittacidae, corrected under Arts. 32.5.3.2 and 35.4.1; available by indication: Art. 12.2.4; valid by substitution in prevailing use (Art. 40.2), replacing Nasiterninae Bonaparte, 1853)—type genus *Micropsitta* Lesson, 1831 (component genus: *Micropsitta* Lesson)

Genera *incertae sedis*: †*Mascarinus* Lesson, 1831, †*Lophopsittacus* Newton, 1875, †*Necropsittacus* Milne-Edwards, 1874.

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