

Falling through the cracks: a family-group name for a clade of hawks and eagles (Accipitridae) including *Morphnus* Dumont, 1816, *Harpia* Vieillot, 1816, *Harpyopsis* Salvadori, 1875 and *Macheiramphus* Bonaparte, 1850

Steven M.S. Gregory, George Sangster, Trevor H. Worthy & R. Paul Scofield

COPYRIGHT: © 2024 Gregory, Sangster, Worthy & Scofield. This is an article distributed under the terms of the Creative Commons Attribution Licence, which permits unrestricted use, distribution, and reproduction in any medium, provided the original authors and source are credited.

ABSTRACT: The family-group names based on the genera *Morphnus*, *Harpia*, *Harpyopsis* and *Macheiramphus*, recently identified as forming a clade at the rank of subfamily within the Accipitridae, are discussed in detail, and the problems associated with the use of Bock's *History and Nomenclature of Avian Family-Group Names* (1994) in assessing their availability and relative priority are examined. The recent use of 'Harpiinae' can only be justified by the application of Article 40.2 (ICZN, 1999: 46), which would see Thrasaetinae Blyth, 1850, replaced by Harpiinae Verheyen, 1959 (1850).

KEYWORDS: *Morphnus*, *Harpia*, *Harpyopsis*, *Macheiramphus* Dumont, Vieillot, Salvadori, Bonaparte, Blyth, Verheyen, Morphninae, Thrasaetinae, Harpiinae, Macheiramphinae, International Commission on Zoological Nomenclature.

ZOOBANK LSID for publication: 6468CA5B-6013-4F05-ADDE-14329156D965

INTRODUCTION

The diurnal raptors (Accipitriiformes) include 257 recognized species (Gill *et al.*, 2023). While the phylogenetic relationships among diurnal raptors have long been poorly documented, the introduction of molecular phylogenetic methods has greatly improved our understanding of these relationships, as reviewed by Mindell *et al.* (2018).

The Accipitridae Vigors, 1824 has been divided into a large number of subfamilies following the phylogenetic analysis of Lerner and Mindell (2005). Based upon Mindell *et al.* (2018), the family-group structure of Accipitridae is shown in Figure 1. The following should be noted: Milvini Vigors, 1824 has clear priority and significant use post-1899 over Haliaeetini Blyth, 1850, and is the correct name for the sister clade to Buteonini; Gypinae Cassin, 1849 has clear priority and use post-1899 over Aegyptiidae Swann, 1921. Bock's reasons (1994: 173) for preferring Neophroninae G.R. Gray, 1848 are now redundant because of the non-monophyly of the Old-World vultures, and the placement of *Neophron* Savigny, 1809 within the Gypaetinae. Several clades are better ranked as tribes, rather than subfamilies. Lerner and Mindell (2005) identified a clade which included the Harpy Eagle *Harpia harpyja* (Linnaeus, 1758), the Crested Eagle *Morphnus guianensis* (Daudin, 1800), and the Papuan Eagle *Harpyopsis novaeguineae* Salvadori, 1875, for which they used the name 'Harpiinae', and from which they excluded *Pithecophaga* Ogilvie-Grant, 1896 and *Harpyhaliaetus* Lafresnaye, 1842. The Bat Hawk *Macheiramphus alcinus* Bonaparte, 1850 was not sampled.

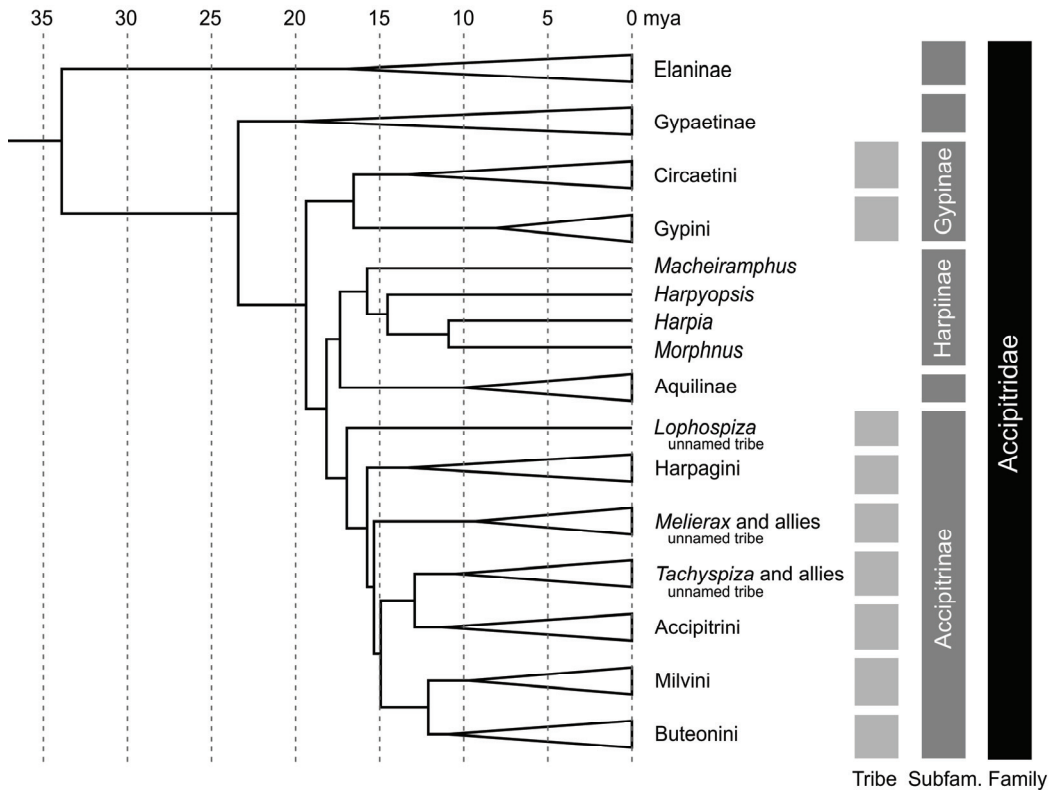


Figure 1. Phylogenetic relationships among diurnal raptors (traditional Accipitridae) based on Mindell *et al.* (2018), with our proposed interim classification. Three clades/lineages require new family-group names, which will be addressed elsewhere.

A clade formed by *Harpia harpyja*, *Morphnus guianensis*, *Harpyopsis novaeguineae* and *Macheiramphus alcinus* was first documented in a study of the effects of colour polymorphism on speciation rates (Hugall & Stuart-Fox, 2012). The authors used a set of multiple DNA markers, including both mitochondrial and nuclear loci of 181 species of raptors (Accipitriformes), and found that these four species formed a moderately supported clade (posterior probability [PP] 0.97). Using sequences of the nuclear RAG-1 exon of 68 species of raptors, Barrowclough *et al.* (2014) reconstructed the same clade, again with moderate support (bootstrap support between 50% and 80%). In a study of the biogeography and evolution of migration, Nagy and Tökölyi (2014) analysed a supermatrix of eight mitochondrial and two nuclear markers to reconstruct a phylogeny of 180 species of raptors. The authors found strong support (PP 0.99) for a clade formed by *Harpia harpyja*, *Morphnus guianensis*, *Harpyopsis novaeguineae* and *Macheiramphus alcinus*. Another supermatrix study used sequences from four mitochondrial and six nuclear markers of 213 species of raptors (Mindell *et al.*, 2018). The clade formed by *Harpia harpyja*, *Morphnus guianensis*, *Harpyopsis novaeguineae* and *Macheiramphus alcinus* was again recovered in this study but its support was poor (PP <0.95). A not as yet peer-reviewed supermatrix study of 236 species of raptors by Catanach *et al.*, which also included genome-wide ultraconserved elements from 120 species, further corroborated the clade formed by *Harpia harpyja*, *Morphnus guianensis*, *Harpyopsis novaeguineae* and *Macheiramphus alcinus*, with 100% bootstrap support.

Thus, there is congruent support for a clade formed by these four species. However, the name of this clade requires clarification. Each of the four included genera has a problematic relationship with the family-group names founded upon them, which will be discussed in detail before reaching a conclusion.

MORPHNUS DUMONT, 1816

Dumont, in the supplement to volume 1 of the *Dictionnaire des Sciences Naturelles* (Dumont, 1816: 88) introduced the generic name *morphnus*, which he credited to ‘Cuv.’ i.e., a MS name of Cuvier. Seven nominal species were included, the first of which was *falco guyanensis*, Daud. He did not capitalize his generic names, which can be corrected under Article 28 (ICZN, 1999: 32). Dumont’s supplement to the entry ‘AIGLE (Ornith.)’ is generally considered to antedate Cuvier’s *Règne Animal*, volume 1, dated 1817 on the title page and which appeared in December 1816 (cf. Dickinson *et al.*, 2011: 85). During most of the 19th century *Morphnus* was credited to Cuvier, and it was for Cuvier’s ‘*Morphnus*’ that G.R. Gray (Gray, 1840: 2) designated ‘*M*[*orphnus*]. *Urubitinga* (L.)’ as type species, now *Buteogallus urubitinga* (J.F. Gmelin, 1788). Thus, an unrelated junior homonym was created. The type species of *Morphnus* Dumont, 1816, was not properly designated until Chubb (Chubb, 1916: 252) designated the first of Dumont’s originally included nominal species, *Falco guianensis* Daudin, 1800, now *Morphnus guianensis* (Daudin, 1800). The existence of Cuvier’s junior homonym has complicated the establishment of a family-group name.

Bock, in his *History and Nomenclature of Avian Family-Group Names* (Bock, 1994: 132), thought that Lesson introduced the family-group name ‘Morphninae’ in 1828 (Lesson, 1828: 89), with *Morphnus* Dumont, 1816, as the type genus. This was incorrect, as the names used by Lesson in the *Manuel d’Ornithologie* were vernacular plurals of generic names, in this case ‘*morphnees*’, which could only be accepted under the strict terms of Article 11.7.2 (ICZN, 1999: 13), and Article 11 (f) (iii) (ICZN, 1985: 27), in force when Bock wrote, which accepts such names only if they have been “generally accepted as valid by authors ... and as dating from that first published in vernacular form”. This is not the case, as Lesson had never been credited with the authorship of family names from this work until Bock’s listings attempted to validate them, long after that was possible. Moreover, Lesson used ‘*morphnus* Cuv.’, and quoted from Cuvier’s work.

Bonaparte, in his *Conspectus Systematis Ornithologiae* (Bonaparte, 1854: 111) introduced the family-group name Morphneæ, at the rank of tribe, which can be corrected to Morphnini Bonaparte, 1854, under Article 32.5.3.1 (ICZN, 1999: 41). Bonaparte included *Morphnus* Cuv[ier]., which by this time had a type species designated by G.R. Gray (Gray, 1840: 2), *Buteogallus urubitinga* (J.F. Gmelin, 1788), and which becomes the type genus under Article 12.2.4 (ICZN, 1999: 16). Under the terms of Article 39 (ICZN, 1999: 46), Morphnini Bonaparte, 1854 is invalid, as the name of its type genus is a junior homonym of *Morphnus* Dumont, 1816.

Brodkorb, in the second part of his *Catalogue of Fossil Birds* (Brodkorb, 1964: 262), considered the ‘group’ name Morphni Ridgway, 1876 (Ridgway, 1876: 147) to have ‘*Morphnus* Dumont’ as the type genus, and although Ridgway cited ‘Cuvier, 1817’ he, unlike Bonaparte, 1854, made it clear that he was erecting his group for *Morphnus guianensis* (Daudin 1800), the type of *Morphnus* Dumont, 1816, and *Morphinus* Fleming, 1822. Article 65.2.1 (ICZN, 1999: 65) would allow a case for accepting Morphninae Ridgway, 1876 to be made to the Commission for a ruling, should a family-group name be required for a taxon including *Morphnus* Dumont, 1816, and excluding the type genera of any older available family-group names.

HARPIA VIEILLOT, 1816

Vieillot, in his *Analyse d'une nouvelle Ornithologie élémentaire* (Vieillot, 1816: 24) established the generic name *Harpia*. Traditionally, the sole species identified by the vernacular name 'Aigle destructeur' has been accepted as the type by monotypy, and as being *Vultur harpyja* Linnaeus, 1758. Technically however, Article 12.3 (ICZN, 1999: 17) excludes vernacular names, as such, from constituting an indication, but the nominal species that were first subsequently and expressly included are deemed to be the only originally included nominal species, Article 67.2.2 (ICZN, 1999: 67). Those included by Vieillot in the *Nouveau Dictionnaire d'Histoire Naturelle*, volume 14 (Vieillot, 1817: 231–240), fulfil that requirement, and from these *Vultur harpyja*, as *T[hrasaetus]. harpyja* was selected as the type by Sharpe (Sharpe, 1874: 223). Independently, and later than Vieillot, Cuvier in his *Règne Animal*, volume 1 (Cuvier, 1816 [1817]: 317) introduced a similar synonym, *Harpyia* Cuvier, 1816, with the type species clearly *Falco harpyia*, i.e., *Falco harpyia* J.F. Gmelin, 1788 = *Vultur harpyja* Linnaeus, 1758, by tautonymy. The spelling *Harpyia* is a junior homonym of *Harpyia* Illiger, 1811 [Mammalia], and *Harpyia* Ochsenheimer, 1810 [Lepidoptera], and because Cuvier's names were preferentially used in the 19th century, *Harpia* Vieillot, 1816 saw very little use, being a presumed junior homonym. Seemingly in need of a generic name, Bonaparte used the binomen *Thrasaëtus harpyia* "G.R. Gray" (Bonaparte, 1838: 108) for *Vultur harpyja* Linnaeus, 1758. This was a MS name from G.R. Gray, who subsequently used *Thrasaëtus* in his *A List of the Genera of Birds* (Gray, 1840: 3) as a replacement name for *Harpyia* Cuvier, 1816, citing Illiger's prior use.

Bock, in his *History and Nomenclature of Avian Family-Group Names* (Bock, 1994: 132), thought that Lesson introduced the family-group name 'Harpiinae' in 1828 (Lesson, 1828: 89), with *Harpia* Vieillot, 1816 as the type genus. This was incorrect, as the names used by Lesson in the *Manuel d'Ornithologie* were vernacular plurals of generic names, in this case 'harpyées', which cannot be accepted under the strict terms of Article 11.7.2 (ICZN, 1999: 13), and Article 11 (f) (iii) (ICZN, 1985: 27), in force when Bock wrote, as has been shown above. Furthermore, Lesson used 'harpyia G. Cuv.', the junior homonym, while indicating that he thought Vieillot's senior synonym identical.

Blyth was the first to introduce an available family-group name in the form of *Thrasaëtinae*, at the rank of subfamily, in the *Journal of the Asiatic Society of Bengal*, volume 19 (Blyth, 1850: 317, 333), in which he included both *Thrasaetos* (as *Thrasaëtus*) and *Morphnus*, as well as the unrelated genera *Pseudastur* and *Spizaetus*. *Thrasaetos* Bonaparte, 1838, therefore, is the type genus under Article 11.7.1.1 (ICZN, 1999: 12) and Article 63 (ICZN, 1999: 65).

In the same year, Burmeister used *Harpyidae*, at the rank of subfamily, in the *Verzeichniss der im zoologischen Museum der Universität Halle-Wittenberg* (Burmeister, 1850: 24), including *Harpyia* Cuvier, 1816, and is therefore invalid under Article 39 (ICZN, 1999: 46) as the name of its type genus is a junior homonym. Burmeister used the name again in 1856 (Burmeister, 1856: iii, 57) under the same circumstances. It should be noted that the genitive of *Harpyia*, for the purposes of forming a family-group name, is *Harpyi-as*, so the spelling should be *Harpyiidae*. This is also true of *Harpyidae* C.H. Smith, 1842, now in the synonymy of *Pteropodidae* J.E. Gray, 1821, for *Harpyia* Illiger, 1811 [Mammalia], which is also invalid under Article 39 (ICZN, 1999: 46), and of which *Harpyidae* Burmeister, 1850 is a junior homonym.

Because of the perceived, but erroneous, homonymy of *Harpia* Vieillot, 1816, and the actual homonymy of *Harpyia* Cuvier, 1816, the generic name *Thrasaetos* Bonaparte, 1838 entered into widespread use in the latter half of the 19th and early 20th centuries, following Sharpe (Sharpe, 1874: 223), although usually included in the *Buteoninae* (Vigors, 1824), and not in a family-group taxon of its own or with near relatives. Pycraft (1902: 315) and Menzbier

(1916: 31) appear to be the last to have used *Thrasaetinae* Blyth, 1850 as a valid name, which has only appeared in lists of names and synonymies since then.

Swann, in part 2 of the second edition of his *A Synopsis of the Accipitres* (Swann, 1922: 104) replaced *Thrasaetos* Bonaparte, 1838 with *Harpia* Vieillot, 1816, presumably following the advice of Oberholser (1919: 282). This was repeated by Peters in the first volume of his *Check-list of Birds of the World* (Peters, 1931: xvii, 246). Both works included *Harpia* Vieillot, 1816 in a large Buteoninae.

The first to employ a family-group name clearly founded upon '*Harpia*' as opposed to '*Harpyia*' the junior homonym, was Verheyen, as part of his series of papers on avian morphology in the *Bulletin de l'Institut royal des Sciences naturelles de Belgique* (Verheyen, 1959: 46), and although *Harpia* appeared in several tables of osteological characteristics, the family-group name Harpiini, at the rank of tribe, was introduced without the description or diagnosis that names introduced after 1930 are required to have, under Article 13.1.1 (ICZN, 1999: 17). This would normally be enough to prevent the name from being available, but Article 40.2 (ICZN, 1999: 46) holds open the possibility that Harpiini Verheyen, 1959 could be viewed as a replacement name, before 1961, for *Thrasaetinae* Blyth, 1850. Curiously, the prevailing usage required for such names to be considered available may have inadvertently been provided by the erroneous promotion of priority from 1828, in Bock's often-consulted list (1994), and the increasingly widespread use of Harpiinae since then (see Table I). The alternative scenario involving valid use before 2000, under Article 13.2.1 (ICZN, 1999: 18), appears not to be possible, as a search of the literature shows the resurgence of use to be entirely after 1999.

HARPYOPSIS SALVADORI, 1875

The generic name *Harpyopsis* was introduced for the newly discovered Papuan Eagle *Harpyopsis novaeguinae* Salvadori, 1875 (Salvadori, 1875: 682). Placed near two of the other genera under consideration by Peters (Peters, 1931: xvii, 247), a family-group name was not erected for *Harpyopsis* until Verheyen used Harpyopsini at the rank of tribe (Verheyen, 1959: 46), this too, like Harpiini, was introduced without a description or diagnosis to satisfy Article 13.1.1 (ICZN, 1999: 17), but without being a replacement name this must remain a *nomen nudum*. Any need for a family-group taxon including *Harpyopsis* Salvadori, 1875, and excluding the type genera of any older available family-group names, would require a new introduction to satisfy the requirements of both Article 13 (ICZN, 1999: 17) and Article 16 (ICZN, 1999: 19). The stem would be Harpyopse- from the genitive of *opsis* (classical Greek: appearance) *opse-os*.

MACHEIRAMPHUS BONAPARTE, 1850

Brooke and Clancey, in the *Bulletin of the British Ornithologists' Club* (Brooke & Clancey, 1981: 371) maintained that *Macheiramphus* Bonaparte, 1850 (Bonaparte, 1850: 482) was the senior name, and should replace *Machaerhamphus* Westerman, 1851 (Westerman, 1851: 29), used until 1960 in the mistaken belief that it was published in 1848. Amadon, in the second edition of volume 1 of Peters' *Check-list of Birds of the World* (Amadon, 1979: 289) attempted to re-instate *Machaerhamphus* Westerman, 1851, claiming that *Macheiramphus* Bonaparte, 1850 was a *nomen oblitum*, but Brooke and Clancey argued that Deignan's reversal in 1960 (Deignan, 1960: 121) occurred early enough, i.e., before publication of the first ICZN Code (ICZN, 1961) to avoid Article 23 (b) (ICZN, 1961: 23) and Article 79 (ICZN, 1961: 87), and that the use of *Macheiramphus* Bonaparte, 1850 since 1960, was predominant. Brooke and Clancey did not consider the implications for any family-group names based upon these genera.

Bock, in his *History and Nomenclature of Avian Family-Group Names* (Bock, 1994: 133), thought that Milne-Edwards and Grandidier introduced the family-group name ‘Macheiramphinae’ in 1879 (Milne-Edwards & Grandidier, 1879: 77), with *Macheiramphus* Bonaparte, 1850 as the type genus. This was incorrect, as Milne-Edwards and Grandidier used a vernacular name ‘*des Machæramphidés*’, which could only be accepted under the strict terms of Article 11.7.2 (ICZN, 1999: 13), and Article 11 (f) (iii) (ICZN, 1985: 27), in force when Bock wrote, and which had never been attributed to this source prior to 1994. Milne-Edwards and Grandidier used an uncredited *Machæramphus* as the generic name, not the spelling adopted by Bonaparte.

It was Verheyen, in his *Revision de la Systematique des Falconiformes* (Verheyen, 1959: 41), who established Machaerhamphinae, at the rank of subfamily. In writing as he did before 1960, Verheyen used the spelling *Machaerhamphus* associated with Westerman, 1851, and provided a brief diagnosis to satisfy Article 13.1.1 (ICZN, 1999: 17), although uses of this family-group name as valid before 2000 are also to be found (see Table I). Deignan was of the opinion that *Machaerhamphus* Westerman, 1851 was only an emendation of *Macheiramphus* Bonaparte, 1850. If this is the case, the spelling of Machaerhamphinae Verheyen, 1959 can be corrected to Macheiramphinae, under Article 32.5.3.3 (ICZN, 1999: 42), family-group names formed from an incorrect subsequent spelling. And while Bonaparte was not mentioned in Westerman’s text, the following paper, also by Westerman, is of a taxon first named by Bonaparte in 1850, so this is not an unreasonable assumption.

Table I. Family-group names introduced for the clade of the Accipitridae that includes *Morphnus* Dumont, 1816, *Harpia* Vieillot, 1816, *Harpyopsis* Salvadori, 1875 and *Macheiramphus* Bonaparte, 1850. Available names in bold. Thrasaetinae and subsequent uses (light blue), Harpiini and subsequent uses (light green). Authors are listed in references.

| Authors(s) and date | Family-group name | Remarks |
|---------------------|------------------------|---|
| Blyth E., 1850 | Thrasaetinae | Oldest available name for the clade. <i>Thrasaetos</i> Bonaparte, 1838 is a junior objective synonym of <i>Harpia</i> Vieillot, 1816. |
| Ridgway R., 1876 | Morphninae | Despite citing the junior homonym, <i>Morphnus</i> Cuvier, 1816 [1817], Morphninae was erected for <i>Morphnus guianensis</i> (Daudin 1800) the type of <i>Morphnus</i> Dumont, 1816. Article 65.2.1 would allow a case for acceptance to be referred to the Commission if ever needed. |
| Rüst [Dr.], 1897 | Thrasaetinae | |
| Pycraft W.P., 1902 | Thrasaetinae | |
| Menzbier M.A., 1916 | Thrasaetinae | |
| Verheyen R., 1959 | Macheiramphinae | Available for a taxon that does not contain <i>Harpia</i> Vieillot, 1816. |
| Verheyen R., 1959 | Harpyopsini | Introduced without a description or diagnosis to satisfy Article 13.1.1. A <i>nomen nudum</i> . |
| Verheyen R., 1959 | Harpiini | A replacement name, before 1961, for Thrasaetinae Blyth, 1850, from which it takes precedence. Article 40.2. |
| Wolters H.E., 1976 | Macheiramphinae | Incorrectly spelled ‘Macheirhamphinae’. |
| Wolters H.E., 1983 | Macheiramphinae | Incorrectly spelled ‘Macheirhamphinae’. |
| Holdaway R.N., 1994 | Machaerhamphinae | Not new in this work. |

| Authors(s) and date | Family-group name | Remarks |
|--------------------------------------|-------------------|---------------------------------|
| Lerner H.R.L. & Mindell D.P., 2005 | Harpiinae | |
| Salvador D.J.I. & Ibanez J.C., 2006 | Harpiinae | |
| Griffiths C.S., <i>et al.</i> , 2007 | Harpiita | Used at the rank of Infratribe. |
| Ong P.S., <i>et al.</i> , 2011 | Harpiinae | |
| Vallejo B., Jr., 2011 | Harpiinae | |
| Boev Z., 2012 | Harpiinae | |
| Liebers-Helbig D., 2013 | Harpiinae | |
| Luczon A.U., <i>et al.</i> , 2014 | Harpiinae | |
| Mayr G., 2014 | Harpiinae | |
| Nagy J. & Tökölyi J., 2014 | Harpiinae | |
| Gomes F.B.R. & Sanaiotti T.M., 2015 | Harpiinae | |
| Jiang Lan, <i>et al.</i> , 2015 | Harpiinae | |
| Lerner H., <i>et al.</i> , 2017 | Harpiinae | |
| Mironov S.V., <i>et al.</i> , 2018 | Harpiinae | |
| Lavallée C.D., <i>et al.</i> , 2020 | Harpiinae | |
| Nagy J., 2020 | Harpiinae | |
| Carvalho C.A., <i>et al.</i> , 2021 | Harpiinae | |
| Mather E.K., <i>et al.</i> , 2021 | Harpiinae | |
| Mather E.K., <i>et al.</i> , 2022 | Harpiinae | |
| Pavia M., <i>et al.</i> , 2022 | Harpiinae | |
| Mather E.K., <i>et al.</i> , 2023 | Harpiinae | |

CONCLUSION

Storrs Olson, in his review of Bock's 1994 *History and Nomenclature of Avian Family-Group Names* (Olson, 1995: 546) commented that it 'must be condemned as worthless and unusable for any purposes of nomenclature' and that 'serious consideration should be given to formal suppression of this work for purposes of nomenclature'. This did not happen, and despite Olson's warnings, the work is still consulted by those who are unaware of its many faults and errors, as evidenced by the recent use of 'Harpiinae'. In terms of priority, the oldest available family-group name for a taxon that includes *Morphnus*, *Harpia*, *Harpyopsis* and *Macheiramphus* is Thrasaetinae Blyth, 1850. Those who wish to use a family-group name based on the senior synonym, *Harpia* Vieillot, 1816, must avail themselves of Article 40.2 (ICZN, 1999: 46), and consider Thrasaetinae Blyth, 1850 replaced before 1961, because of the synonymy of the type genus, by Harpiini Verheyen, 1959, which would take precedence from 1850. The Code places no limits, forward or back, on 'prevailing usage' (this being the chief criticism of the concept, which is manifestly capable of producing different results over time), therefore the uses of 'Harpiinae' following Lerner and Mindell (Lerner & Mindell, 2005: 339, 343) must, presumably, be allowed to be taken into consideration, despite the basis (seemingly) for such use being the erroneous priority afforded to the name by Bock (1994: 132). The only other available family-group name in this clade is Macheiramphinae Verheyen, 1959, while Morphninae Ridgway, 1876 would require an application to the ICZN Commission under Article 65.2.1 (ICZN, 1999: 65) before it could be used.

Gregory and Sangster (2023: N57) listed the 51 non-passerine family-group names that are, or are potentially, maintained by the application of Article 40.2 (ICZN, 1999), as having precedence over senior family-group names with junior synonyms as type genera by virtue of being in prevailing usage. The three family-group names that are available, as described above, for the clade that includes *Morphnus* Dumont, 1816, *Harpia* Vieillot, 1816, *Harpyopsis* Salvadori, 1875 and *Macheiramphus* Bonaparte, 1850, are shown in Table I, together with the subsequent uses found after an extensive search. If the uses post-1999 are admitted, and there is nothing in the Code (ICZN, 1999) that says that they cannot, then the valid name for the clade can be stated as:

Harpiinae

Harpiini Verheyen, 1959 (1850)

Replacement name for Thrasaetinae Blyth, 1850, under Article 40.2 (ICZN, 1999: 46).

Type genus: *Harpia* Vieillot, 1816.

Contents: *Morphnus*, *Harpia*, *Harpyopsis* and *Macheiramphus*.

ZooBank LSID for Harpiini: BA51E506-EBB3-45A1-BA74-D4D223B54621

Comments: The name Harpiinae differs by only one additional letter in the familial prefix from the name Harpidae Bronn, 1849 (Mollusca; based on *Harpa* Röding, 1798). Although such names are potentially confusing, they are allowed by Article 55.4 (ICZN, 1999: 58) and cannot be avoided when the stems of the relevant type genera differ by one letter (Harpi- and Harp-). Any homonymous spellings as a result of a *lapsus* are not formally recognized, and any use of 'Harpiidae' for the molluscs would be deemed to be based on an incorrect subsequent spelling of the generic name as '*Harpia*', and must be corrected under Article 35.4.1 (ICZN, 1999: 44).

The intention of Article 23.1.1 (ICZN, 1999: 24) and Article 40.2 (ICZN, 1999: 46) is clearly to moderate the principle of priority for family-group names replaced before 1961, allowing the preservation of family-group names based on type genera that are senior synonyms. This is a direct intervention in cases that might otherwise need reversal of precedence, Article 23.9. While the junior name in this case would not fulfil the requirements of Article 23.9.1, the senior synonym (Thrasaetinae Blyth, 1850), which has not been used as valid since 1916, would now clearly threaten stability and cause confusion, given the preponderance of Harpiinae since 2005.

In purposefully attempting to place certain family-group names beyond reproach, Bock (1994) has undoubtedly influenced the choices made by those who have come after, and in so doing, permanently altered the dynamic of those names because of the operation of 'prevailing usage'. It is doubtful whether Lerner and Mindell (2005) would have chosen the name they did without that influence, and would probably have been unwilling to make an application to the ICZN for reversal of precedence. We will never now know why Bock chose not to let the Code then in force (ICZN, 1985) decide the correct outcome. Allowing the Code to operate unhindered by errors of omission or commission will generally result in stable and lasting solutions to nomenclatural problems, and as has so often been observed, the truth will out.

REFERENCES

Amadon D., 1979. *Macheiramphus* Bonaparte, 1850 (p. 289, footnote). In: *Check-list of birds of the world, a revision of the work of James L. Peters*. Mayr, E. & G.W. Cottrell (eds.). Vol. 1, second edition. – Museum of Comparative Zoology, Cambridge, Massachusetts.

Barrowclough G.F., Groth J.G., Lai J.E. & Tsang S.M., 2014. The phylogenetic relationships of the endemic genera of Australo-Papuan hawks. – *Journal of Raptor Research*, 48 (1): 36–43.

- Blyth E., 1850. Conspectus of the ornithology of India, Burma and the Malayan Peninsula, inclusive of Sindh, Asám, Ceylon and the Nicobar islands. – *Journal of the Asiatic Society of Bengal*, 19 (4): 317–342.
- Bock W.J., 1994. History and nomenclature of avian family-group names. – *Bulletin of the American Museum of Natural History*, 222: 1–281.
- Boev Z., 2012. *Circaetus rhodopensis* sp. n. (Aves, Accipitriformes) from the Late Miocene of Hadzhdimovo (SW Bulgaria). – *Acta zoologica bulgarica*, 64 (1): 5–12.
- Bonaparte C.L., 1838. Description of new or interesting birds from South America and Mexico. – *Proceedings of the Zoological Society of London*, 5 (59): 108–122.
- Bonaparte C.L., 1850. Revue général de la classe des oiseaux. Première partie: Perroquets et oiseaux de proie. – *Revue et Magasin de Zoologie pure et appliquée*, 2 (9): 474–492.
- Bonaparte C.L., 1854. Conspectus Systematis Ornithologiæ. – *Annales des Sciences Naturelles (Paris)*, ser. 4, Zoologie 1: 105–152.
- Brodkorb P., 1964. Catalogue of fossil birds: Part 2. – *Bulletin of the Florida State Museum, Biological Sciences*, 8 (3): 195–335.
- Bronn H.G., 1849. *Index Palaeontologicus: Oder Übersicht der bis jetzt bekannten fossilen Organismen*. Abth. 2, B. Enumerator palaeontologicus. 1–980. – E. Schweizerbart, Stuttgart.
- Brooke R.K. & Clancey P.A., 1981. The authorship of the generic and specific names of the bat hawk. – *Bulletin of the British Ornithologists' Club*, 101 (4): 371–372.
- Burmeister H., 1850. *Verzeichniss der im zoologischen Museum der Universität Halle-Wittenberg aufgestellten Säugethiere, Vögel und Amphibien*. 1–84. – Ed. Anton, Halle.
- Burmeister H., 1856. *Systematische Übersichte der Thiere Brasiliens*, Vol. 2, Aves, hälfte 1. i–x, 1–526. – Georg Reimer, Berlin.
- Carvalho C.A., Furo I.O., O'Brien P.C.M., Pereira J., O'Connor R.E., Griffin D., Ferguson-Smith M., de Oliveira E.H.C., 2021. Comparative chromosome painting in *Spizaetus tyrannus* and *Gallus gallus* with the use of macro- and microchromosome probes. – *PLoS One* 16 (11): e0259905. doi: 10.1371/journal.pone.0259905.
- Cassin J., 1849. Notes of an examination of the family Vulturidae, in the collection of the Academy of Natural Sciences of Philadelphia. – *Proceedings of the Academy of Natural Sciences of Philadelphia*, 4 (7): 158–162.
- Chubb C., 1916. *The birds of British Guiana, based on the collection of Frederick Vavasour McConnell*. Vol. 1, i–liii, 1–528. – Quaritch, London.
- Cuvier G., 1816 [1817]. *Le règne animal distribué d'après son organisation, pour servir de base à l'histoire naturelle des animaux et d'introduction à l'anatomie comparée*. Vol. 1, i–xxxvii, 1–540. – Deterville, Paris.
- Daudin F.M., 1800. *Traité élémentaire et complet d'ornithologie, ou, Histoire naturelle des oiseaux*, Vol. 2. 1–473. – Bertrandet, Paris.
- Deignan H.G., 1960. The oldest name for the bat-eating pern. – *Bulletin of the British Ornithologists' Club*, 80 (7): 121.
- Dickinson E.C., Overstreet L.K., Dowsett R.J. & Bruce M.D., 2011. *Priority! The dating of scientific names in ornithology*. 1–319. – Aves Press, Northampton.
- Dumont C., 1816. AIGLE (Ornith.) (supplément, pp. 83–91). In: *Dictionnaire des Sciences Naturelles*. Vol. 1. – F.G. Levrault, Paris.
- Fleming J., 1822. *The philosophy of Zoology; or a general view of the structure, functions, and classification of animals*. Vol. 2. 1–618. – Constable & Co., Edinburgh.
- Gill F., Donsker D. & Rasmussen P. (eds.), 2023. IOC world bird list (v13.1). <https://doi.org/10.14344/IOC.ML.13.1>.

Gmelin J.F., 1788. *Systema naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis*. Vol. 1, pt. 1, 1–500. – G.E. Beer, Lipsiae [Leipzig].

Gomes F.B.R. & Sanaiotti T.M., 2015. A review of the distribution of the Crested Eagle, *Morphnus guianensis* (Daudin, 1800) (Accipitridae: Harpiinae), including range extensions. – *Revista Brasileira de Ornitologia*, 23 (1): 36–63.

Gray G.R., 1840. *A list of the genera of birds with an indication of the typical species of each genus compiled from various sources*. [i]–viii, 1–80, addenda & errata [i]–ii. – Richard & John E. Taylor, London.

Gray G.R., 1848. *List of the specimens of birds in the collection of the British Museum*. Second Edition. Part 1. Accipitres. i–viii, 1–120. – Trustees of the British Museum, London.

Gray J.E., 1821. On the natural arrangement of vertebrate animals. – *The London Medical Repository, monthly journal, and Review*, 15: 297–311.

Gregory S.M.S. & Sangster G., 2023. The correct family-group names of two parrot clades (Psittaciformes: Amazonini and Proboscigerini). – *Avian Systematics*, 1 (XII): N55–N66.

Griffiths C.S., Barrowclough G.F., Groth J.G. & Mertz L.A., 2007. Phylogeny, diversity, and classification of the Accipitridae based on DNA sequences of the RAG-1 exon. – *Journal of Avian Biology*, 38: 587–602.

Holdaway R.N., 1994. An exploratory phylogenetic analysis of the genera of the Accipitridae, with notes on the biogeography of the family (pp. 601–650). In: *Raptor Conservation Today, Proceedings of the IV World Conference on Birds of Prey and Owls*. B.-U. Meyburg & R.D. Chancellor (eds.). – W.W.G.B.P., Pica Press, Berlin, London and Paris.

Hugall A.F. & Stuart-Fox D., 2012. Accelerated speciation in colour-polymorphic birds. – *Nature*, 485: 631–634.

I.C.Z.N. [International Commission on Zoological Nomenclature], 1961. *International Code of Zoological Nomenclature adopted by the XV International Congress of Zoology*. i–xvii, 1–176. – International Trust for Zoological Nomenclature, London.

I.C.Z.N. [International Commission on Zoological Nomenclature], 1985. *International Code of Zoological Nomenclature third edition adopted by the XX general assembly of the International Union of Biological Sciences*. i–xx, 1–338. – International Trust for Zoological Nomenclature, London.

I.C.Z.N. [International Commission on Zoological Nomenclature], 1999. *International Code of Zoological Nomenclature*. 4th edition. i–xxix, 1–306. – International Trust for Zoological Nomenclature, London.

Illiger J.K.W., 1811. *Prodromus Systematis Mammalium et Avium*. i–xviii, 1–301. – C. Salfeld, Berolini [Berlin].

Jiang Lan, Chen Juan, Wang Ping, Ren Qiongqiong, Yuan Jian, Qian Chaoju, Hua Xinghong, Guo Zhichun, Zhang Lei, Yang Jianke, Wang Ying, Zhang Qin, Ding Hengwu, Bi De, Zhang Zongmeng, Wang Qingqing, Chen Dongsheng & Kan Xianzhao, 2015. The mitochondrial genomes of *Aquila fasciata* and *Buteo lagopus* (Aves, Accipitriformes): sequence, structure and phylogenetic analyses. – *PloS One*, 10 (8): e0136297.

Lafresnaye N.F.A.A., 1842. Description d'un nouveau genre d'Oiseau de proie. – *Revue Zoologique, par la société Cuvierenne*, 5 (6): 173.

Lavallée C., Galloway T. & Rochon K., 2020. Infestation parameters of chewing lice (Phthiraptera: Amblycera and Ischnocera) on bald eagles, *Haliaeetus leucocephalus* (Accipitriformes: Accipitridae), in Manitoba, Canada. – *The Canadian Entomologist*, 152 (1): 89–97. doi: 10.4039/tce.2019.67.

Lerner H.R.L. & Mindell D.P., 2005. Phylogeny of eagles, Old World vultures, and other Accipitridae based on nuclear and mitochondrial DNA. – *Molecular Phylogenetics and Evolution*, 37: 327–346.

Lerner H., Christidis L., Gamauf A., Griffiths C., Haring E., Huddleston C.J., Kabra S., Kocum A., Krosby M., Kvaløy K., Mindell D., Rasmussen P., Røv N., Wadleigh R., Wink M. & Gjershaug J.O., 2017. Phylogeny and new taxonomy of the Booted Eagles (Accipitriformes: Aquilinae). – *Zootaxa*, 4216 (4): 301–320. doi: 10.11646/zootaxa.4216.4.1.

Lesson R.P., 1828. *Manuel d'Ornithologie, ou description des genres et des principales espèces d'oiseaux*. Vol. 1, i–iv, 1–421. – Roret, Paris.

Liebers-Helbig D., 2013. Die “molekulare Revolution” und ihre Folgen für die ornithologisch-taxonomische Forschung. – *Der Ornithologischer Beobachter*, 110 (3): 257–269.

Linnaeus C., 1758. *Systema naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis*. 10th edition. 1. 1–824. – Laurentii Salvii, Holmiæ [Stockholm].

Luczon A.U., Fontanilla I.K.C., Ong P.S., Basiao Z.U., Sumaya A.M.T. & Quilang J.P., 2014. Genetic diversity of the critically endangered Philippine eagle *Pithecophaga jefferyi* (Aves: Accipitridae) and notes on its conservation. – *Journal of Threatened Taxa*, 6 (10): 6335–6344.

Mather E.K., Lee M.S.Y., Camens A.B. & Worthy T.H., 2021 [2022]. An exceptional partial skeleton of a new basal raptor (Aves: Accipitridae) from the late Oligocene Namba formation, South Australia. – *Historical Biology*, 34 (7): 1175–1207.

Mather E.K., Lee M.S.Y., Camens A.B. & Worthy T.H., 2023. A giant raptor (Aves: Accipitridae) from the Pleistocene of southern Australia. – *Journal of Ornithology*, 164 (3): 499–526.

Mather E.K., Lee M.S.Y. & Worthy T.H., 2022. A new look at an old Australian raptor places “*Taphaetus*” *lacertosus* de Vis 1905 in the Old World Vultures (Accipitridae: Aegypiinae). – *Zootaxa*, 5168 (1): 1–23.

Mayr G., 2014. Comparative morphology of the radial carpal bone of neornithine birds and the phylogenetic significance of character variation. – *Zoomorphology*, 133: 425–434.

Menzbier M.A., 1916. *Faune de la Russie et des pays limitrophes fondée principalement sur les collections du musée zoologique de l'académie impériale des sciences de Petrograd*. Oiseaux (Aves). Volume VI. Falconiformes. Livraison 1, i–ii, 1–344. – Petrograd.

Milne-Edwards A. & Grandidier A., 1879. *Histoire physique, naturelle et politique de Madagascar*. XII. Histoire naturelle des oiseaux. Part 1. 1–176. – l'Imprimerie Nationale, Paris.

Mindell D.P., Fuchs J. & Johnson J.A., 2018. Phylogeny, taxonomy, and geographic diversity of diurnal raptors: Falconiformes, Accipitriiformes, and Cathartiformes (pp. 3–32). In: Sarasola, J.H., J. Grande & J. Negro (eds.). *Birds of Prey Biology and conservation in the XXI century*. – Springer, Cham, Switzerland.

Mironov S.V., Efeykin B.D., Ibanez J.C., Sumaya A.M. & Tolstenkov O.O., 2018. Captive individuals of endangered Philippine raptors maintain native feather mites (Acariformes: Pterolichoidea) species. – *International Journal for Parasitology: Parasites and Wildlife*, 7 (2): 116–133.

<https://doi.org/10.1016/j.ijppaw.2018.03.002>.

Nagy J., 2020. *Biologia Futura*: Rapid diversification and behavioural adaptation of birds in response to Oligocene–Miocene climatic conditions. – *Biologia Futura*, 71: 109–121.

Nagy J. & Tökölyi J., 2014. Phylogeny, historical biogeography and the evolution of migration in accipitrid birds of prey (Aves: Accipitriiformes). – *Ornis Hungarica*, 22 (1): 15–35.

Oberholser H.C., 1919. *Thrasaetos* versus *Harpia*. – *Auk*, 36 (2): 282.

Ogilvie-Grant W.R., 1896. [several interesting birds from the island of Samar]. – *Bulletin of the British Ornithologists' Club*, 6 (XL): xvi–xviii.

Olson S.L., 1995. Review – History and nomenclature of avian family-group names. *Bulletin of the American Museum of Natural History*, volume 222. W.J. Bock. 1994. 281 pages. – *Auk*, 112 (2): 539–546.

Ong P.S., Luczon A.U., Quilang J.P., Sumaya A.M.T., Ibañez J.C., Salvador D.J. & Fontanilla I.K.C., 2011. DNA barcodes of Philippine accipitrids. – *Molecular Ecology Resources*, 11 (2): 245–254. doi: 10.1111/j.1755-0998.2010.02928.x.

Ochsenheimer F., 1810. *Die Schmetterlinge von Europa*. Vol. 3. i–viii, 1–360. – G. Fleischer, Leipzig.

Pavia M., Cavagna S., Irene P., Pellegrino L. & Carnevale G., 2022. The oldest fossil record of *Buteo* (Aves, Accipitridae) from the Late Miocene of Italy and its evolutionary implications. – *Bollettino della Società Paleontologica Italiana*, 61 (2): 145–158.

Peters J.L., 1931. *Check-list of Birds of the World*. 1st ed. 1. i–xviii, 1–345. – Harvard University Press, Cambridge, Massachusetts.

Pycraft W.P., 1902. Contributions to the osteology of birds. Part V. Falconiformes. – *Proceedings of the Zoological Society of London*, 1902, 1 (2): 277–320.

Ridgway R., 1876. Studies of the American Falconidae. – *Bulletin of the United States Geological and Geographical Survey of the Territories*, 2 (2): 91–182.

[Röding P.F.], 1798. *Museum Boltenianum, sive, Catalogus cimeliorum e tribus regnis naturae quae olim collegerat Joa. Fried. Bolten*. Pars Secunda. i–viii, 1–199. – J.C. Trappii, Hamburgi [Hamburg].

Rüst [Dr.], 1897. *Katalog der systematischen Vogelsammlung des Provinzial-Museums in Hannover*. [i–iv], 1–106. – Wilh. Riemschneider, Hannover.

Salvador D.J.I. & Ibanez J.C., 2006. Ecology and conservation of Philippine eagles. – *Ornithological Science*, 5 (2): 171–176.

Salvadori T., 1875. Descrizione dell' *Harpyopsis novae guineae*, nuovo genere e nuova specie di rapace della sottofamiglia degli Accipitrini, raccolta dal Sig. L.M. D'Albertis nella Nuova Guinea. – *Annali del Museo di Storia Naturale di Genova*, 7: 682–683.

Savigny M.J.-C.L., 1809. Système des oiseaux de l'Égypte et de la Syrie (pp. 63–114). In: *Description de l'Égypte, ou recueil des observations et des recherches qui ont été faites en Égypte pendant l'expédition de l'armée Française*. Histoire Naturelle. Tome Premier. – Imprimerie Impériale, Paris.

Sharpe R.B., 1874. *Catalogue of the Birds in the British Museum*. I. Catalogue of the Accipitres or diurnal birds of prey in the collection of the British Museum. i–xiii, 1–479. – Trustees of the British Museum, London.

Smith C.H., 1842. The naturalist's library, vol. 13: *An Introduction to the Mammalia*. 1–313. – W.H. Lizars, Edinburgh.

Swann H.K., 1921. *A Synopsis of the Accipitres (Diurnal Birds of Prey) Comprising Species and Subspecies described up to 1920, with their Characters and Distribution*. Second edition. Part 1. 1–63. – Wheldon & Wesley, London.

Swann H.K., 1922. *A Synopsis of the Accipitres (Diurnal Birds of Prey) Comprising Species and Subspecies described up to 1920, with their Characters and Distribution*. Second edition. Part 2. 64–122. – Wheldon & Wesley, London.

Vallejo B., Jr., 2011. The Philippines in Wallacea (pp. 27–42). In: Telnov D. (ed.) *Biodiversity, biogeography and nature conservation in Wallacea and New Guinea*. Vol. 1. – The Entomological Society of Latvia.

Verheyen R., 1959. Revision de la Systematique des Falconiformes. – *Bulletin de l'Institut royal des Sciences naturelles de Belgique*, 35 (37): 1–51.

Vieillot L.P., 1816. *Analyse d'une nouvelle ornithologie élémentaire*. i–iv, 1–70. – Deterville, Paris.

Vieillot L.P., 1817. HARPIE (pp. 231–240). In: *Nouveau Dictionnaire d'Histoire Naturelle*. Vol. 14, GUE–HOM. – Deterville, Paris.

Vigors N.A., 1824. Sketches in ornithology; or, observations on the leading affinities of some of the more extensive groups of birds. – *The Zoological Journal*, 1 (3): 308–346.

Westerman G.F., 1851. Beschrijving van eenen nieuwen roofvogel *Machaerhamphus alcinus*. – *Bijdragen tot de Dierkunde*, 1 (2): 29–30.

Wolters H.E., 1976. *Die Vogelarten der Erde. Eine systematische Liste mit verbreitungsangaben sowie deutschen und englischen Namen*. Lieferung 2. 81–160. – Paul Parey, Hamburg.

Wolters H.E., 1983. *Die Vögel Europas im System der Vögel. Eine Übersicht*. 1–70. – Biotropic Verlag, Baden-Baden.

Addresses

Steven M.S. Gregory (✉), 35 Monarch Road, Northampton NN2 6EH, UK.
e-mail: sgregory.avium@ntlworld.com.

George Sangster, Naturalis Biodiversity Center, Darwinweg 2, PO Box 9517, 2300 RA Leiden, the Netherlands.
e-mail: g.sangster@planet.nl.

Trevor H. Worthy, College of Science and Engineering, Flinders University, Adelaide 5001, SA, Australia.
e-mail: trevor.worthy@flinders.edu.au.

R. Paul Scofield, Canterbury Museum, Rolleston Avenue, Christchurch 8013, New Zealand.
e-mail: pscofield@canterburymuseum.com.