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# *Chironius scurrula*, the correct nomen for *Chironius scurrulus* (Squamata, Serpentes, Colubridae), with a list of the correct spellings of specific epithets currently in use in this genus

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## Abstract

The correct epithet of the snake species so far known as *Chironius scurrulus* Wagler *in* Spix, 1824 is shown to be *scurrula*, as it is not an adjective but a noun in apposition to the generic substantive, therefore invariable. This case prompted us to review the grammatical status of the epithets of the 23 species currently considered valid in the genus *Chironius* Fitzinger, 1826. Only about 56.5 % of these epithets turned out to be adjectives agreeing in gender with the generic nomina with which they are combined. Although this proportion will be very variable from one zoological genus to another, it is likely that in genera with a high number of species (10–20 or more), some epithets will not agree in gender with the genus nomina. In order to avoid subsequent corrections in the spellings of epithets (and therefore 'nomenclatural instability'), taxonomists are therefore encouraged to pay attention to this question. As a consequence of this survey, we also provide new information on a few miscellaneous questions: the author of the type species designation for *Chironius*; the author, date, type specimen and type locality of the nominal taxon *Chironius flavolineatus*; and the etymology and status of the epithets of the bionomina *Chironius foveatus* and *Chironius leucometapus*.

## Key words

Specific epithets, generic substantives, adjectives, participles, gender agreement, invariable spellings.

## The *Natrix scurrula* case

The South American snake currently known as *Chironius scurrulus* is widely distributed in Amazonia and the Guianas (Nogueira *et al.* 2019, Uetz *et al.* 2023), where it is apparently not uncommon, judging from the number of records in GBIF (Anonymous 2023). As it turns out, however, its specific epithet has been wrongly spelled for over sixty years.

Wagler *in* Spix (1824: 24) described *Natrix scurrula* based on a specimen from the Japurá River, in Brazil, and in the French text following the Latin description, he gave it the name "la couleuvre arlequin" (the harlequin snake), on account of its colours resembling the dressing of a harlequin (page 25: "d'après le coloris semblable au vetiment d'un arlequin"). As a matter of fact, a harlequin, a clown, is exactly the meaning of the Latin noun *scurrula*, which is masculine, despite its ending in *-a*. Being a noun used in apposition, the epithet *scurrula* is invariable, whatever the generic substantive with which it is combined, according to Articles 31.2.1 and 34.2.1 of the *International Code of Zoological Nomenclature* (Anonymous 1999; 'the *Code*' below).

Boulenger (1894) placed *Natrix scurrula* in the synonymy of *Chironius fuscus*, a decision that did not tackle the status of the specific epithet *scurrula*. The first authors to use the spelling *scurrulus* were Hoge & Nina (1964), when they accepted this taxon as a separate species of *Chironius*. Since then, the binomen *Chironius scurrulus* has been widely used in the herpetological literature (e.g., Dixon & Soini 1977, Cunha & Nascimento 1982, Pérez-Santos & Moreno 1988, Duellman & Salas 1991, Marques & Sazima 2003, Fraga *et al.* 2013, Wallach *et al.* 2014, Nogueira *et al.* 2019, Uetz *et al.* 2023). All these authors were apparently unaware of Wagler's use of the noun *scurrula* in reference to a harlequin or a clown, as were probably Beolens *et al.* (2011), when using for this species the standard English name Wagler's Sipo.

In view of the above-discussed facts, we hereby correct the name *Chironius scurrulus* to *Chironius scurrula*, and propose the use of the standardised English name harlequin sipo, following Wagler's original suggestion. This nomen is not the only one in the genus *Chironius* whose epithet is an invariable noun in apposition: it is also the case of *Chironius challenger* Kok, 2010 and *Chironius diamantina* Fernandes & Hamdan, 2014.

Some epithets, like *laevicollis*, based on the roots of nouns in composition and ending in *-is* (in the feminine or masculine) or *-e* (in the neuter), are adjectives of the third declension.

As some authors sometimes have difficulties in establishing the correct spellings of some specific epithets, examples may be useful to help in such cases. This is why we provide below a list of the nomina currently considered valid in this genus, with their etymologies, grammatical status and correct spellings as established under the *Code*. In what follows, some of the adjectival epithets are qualified as neologisms in 'modern nomenclatural Latin', as their existence is not acknowledged in classical or medieval Latin dictionaries, these adjectives having been coined by taxonomists in the 18th, 19th or 20th century.

## Etymology and nomenclatural status of the nomina currently considered valid in the genus *Chironius* Fitzinger, 1826

### ***Chironius*** Fitzinger, 1826

Original reference. • *Chironius* Fitzinger, 1826: 29, 31, 60.

Type species. • *Coluber carinatus* Linnaeus, 1758: 223, by subsequent designation of Ruthven (1922: 65).

Etymology. • Not given by Fitzinger (1826). Ksas (2015: 94) suggested that it could be a reference to the name of the centaur *Chiron* of the Greek mythology.

Grammatical gender. • Masculine (Article 30.1).

Comments. • Fitzinger (1826: 60) referred four nominal species to this genus when he erected it: *C. longicauda*, previously published as *Coluber longicauda* by Fitzinger *in* Ritter, 1823 (*nomen nudum*); *C. leuckarti* (*nomen nudum*); *C. dione*, new combination for *Coluber dione* Pallas, 1773; and *C. carinatus*, new combination for *Coluber carinatus* Linnaeus, 1758. Peters & Orejas-Miranda (1970: 58), Wallach *et al.* (2014: 160) and Uetz *et al*. (2023) wrote that the type species of this nominal genus was *Coluber carinatus* Linnaeus, 1758, but without stating where this designation

had been made. In fact, Ruthven (1922: 65) had stated that *Chironius carinatus* had been designated as type species of this genus by Fitzinger (1826) himself, which was wrong, as this author in 1826 never used the term and concept of 'type' (which he did in Fitzinger 1843), but by his action Ruthven (1922) became the author of the type designation for this nominal genus.

### ***Chironius bicarinatus*** (Wied-Neuwied, 1820)

Original reference. • *Coluber bicarinatus* Wied-Neuwied, 1820: 181.

First use of current binomen. • *Chironius bicarinatus*: Bailey 1955: 8.

Etymology of epithet. • Latin: *bi-*, from *bis*, 'twice' and *carinatus*, 'having the form of a ship's hull, careened'.

Grammatical status of epithet. • Neologism (in 'modern nomenclatural Latin'): compound adjective in the nominative singular, agreeing in gender with the generic substantive with which it is combined (Article 31.2).

### ***Chironius brazili*** Hamdan & Fernandes, 2015

Original reference. • *Chironius brazili* Hamdan & Fernandes, 2015: 107.

Etymology of epithet. • Patronym of Vital Brazil Mineiro da Campanha (1865–1950).

Grammatical status of epithet. • Invariable noun in the genitive (Article 31.1).

### ***Chironius carinatus*** (Linnaeus, 1758)

Original reference. • [*Coluber*] *carinatus* Linnaeus, 1758: 223.

First use of current binomen. • *C*[*hironius*] *carinatus*: Fitzinger, 1826: 60; *Chironius carinatus*: Ruthven, 1922: 65.

Etymology of epithet. • Latin *carinatus*, 'having the form of a ship's hull, careened'.

Grammatical status of epithet. • Adjective in the nominative singular, agreeing in gender with the generic substantive with which it is combined (Article 31.2).

### ***Chironius challenger*** Kok, 2010

Original reference. • *Chironius challenger* Kok, 2010: 31, 32.

Etymology of epithet. • Patronym of George Edward Challenger, a fictional novel character created by Arthur Conan Doyle.

Grammatical status of epithet. • Invariable noun, in apposition to the generic substantive with which it is combined (Articles 31.2.1, 34.2.1).

### ***Chironius diamantina*** Fernandes & Hamdan, 2014

Original reference. • *Chironius diamantina* Fernandes & Hamdan, 2014.

Etymology of epithet. • Name of the Chapada Diamantina, State of Bahia, Brazil.

Grammatical status of epithet. • Invariable noun, in apposition to the generic substantive with which it is combined (Articles 31.2.1, 34.2.1).

### ***Chironius dixoni*** Wiest, 1978

Original reference. • *Chironius dixoni* Wiest, 1978: 121.

Etymology of epithet. • Patronym of James Ray Dixon, chairman of the advisory committee for the Ph.D. work of John Alton Wiest.

Grammatical status of epithet. • Invariable noun in the genitive (Article 31.1).

Comments. • Entiauspe-Neto & Loebmann (2019) showed that this nomen had ptiority over *Chironius laurenti* Dixon, Wiest & Cei, 1993, whose epithet was based on the patronym of Raymond Ferdinand Louis-Philippe Laurent (1917–2005). Without explanation, Uetz *et al.* (2023) did not accept this correction.

### ***Chironius exoletus*** (Linnaeus, 1758)

Original reference. • [*Coluber*] *exoletus* Linnaeus, 1758: 223.

First use of current binomen. • *Chironius exoletus*: Hoge, Romano & Cordeiro, 1978: 37, 41.

Etymology of epithet. • Latin: *exoletus*, 'having reached the end of growth, adult'.

Grammatical status of epithet. • Adjective in the nominative singular, agreeing in gender with the generic substantive with which it is combined (Article 31.2).

### ***Chironius flavolineatus*** (Boettger, 1885)

Original reference. • *Herpetodryas flavolineatus* Boettger, 1885: 234.

First use of current binomen. • *Chironius flavolineatus*: Bailey 1955: 8.

Etymology of epithet. • Latin: *flavus*, 'yellow' and *lineatus* 'lined'.

Grammatical status of epithet. • Neologism (in 'modern nomenclatural Latin'): compound adjective in the nominative singular, agreeing in gender with the generic substantive with which it is combined (Article 31.2).

Comments. • [1] Schlegel (1826: 327) and Fitzinger (1826: 58) mentioned a species nomen [*Coluber*] "*flavolineatus* Reinw.", credited to H. Boie in his unpublished manuscript on the herpetology of Java. No character being given for this taxon, this nomen is a *nomen nudum*, as noted by Dixon *et al.* (1993: 110, 112). [2] Wallach *et al.* (2014: 162) followed Dixon *et al.* (1993: 105) in crediting the nomen *Chironius flavolineatus* to Jan (1863: 80). However, in his work, Jan proposed the new nomen [*H. carinatus*] "var. *flavolineata*", which he credited to Fitzinger, for a variety from Brazil, one of the seven varieties he recognised in the species *Herpetodryas carinatus*, but he did not provide any descriptive or diagnostic character allowing to distinguish this variety from the other ones, so his new nomen is a *nomen nudum*, as noted by Bailey (1955: 13). The statement of Dixon *et al.* (1993: 112) that the specimen shown in figure 3 of plate 2 of Jan & Sordelli (1869) belonged to this taxon and corresponds to this nomen is unsubstantiated, as this nomen was not mentioned in this work. The binomen *Herpetodryas flavolineatus* was made available by Boettger (1885: 234), who was the first author to provide a (rather detailed) description of this species, based on two specimens from Paraguay, distinguishing this species from *carinatus*, but recognition of Jan (1863) as the author of this nomen was also unfounded, as this author was not responsible for providing the "criteria of availability" of the nomen (Article 50.1). [3] Wallach *et al.* (2014: 162) credited Dixon *et al.* (1993: 112) with the designation of a specimen in the Milan Museum, destroyed during World War II, as lectotype for this nominal species, but this is wrong, as these authors did not use this term or an equivalent one (see Article 74.5), but wrote: "Holotype: A holotype was not seen but supposedly exists in the Milan Museum (fide Jan, 1863: 80). Two specimens, one from Brazil and one from Bahia, were mentioned in the original description, but no specific specimen was designated as the holotype." As the Brazilian specimens mentioned by Jan (1863) are lost, and as the species was in fact first characterised by Boettger (1885) on the basis of two specimens from Paraguay, it is here suggested that one of these two specimens, if still extant, should be designated as neotype for this nominal species, which would also result in a change of type locality. This might have nomenclatural consequences if later the taxonomy of this group was again changed.

### ***Chironius flavopictus*** (Werner, 1909)

Original reference. • *Herpetodryas carinatus* var. *flavopicta* Werner, 1909: 220.

First use of current binomen. • *Chironius flavopictus*: Peters 1960: 511.

Etymology of epithet. • Latin: *flavus*, 'yellow' and *pictus* 'painted'.

Grammatical status of epithet. • Neologism (in 'modern nomenclatural Latin'): compound adjective in the nominative singular, agreeing in gender with the generic substantive with which it is combined (Article 31.2).

### ***Chironius foveatus*** Bailey, 1955

Original reference. • *Chironius foveatus* Bailey, 1955: 10.

Etymology of epithet. • Latin: *fovea*, 'pit' (present on vertebral scales).

Grammatical status of epithet. • Neologism (in 'modern nomenclatural Latin'): adjective in the nominative singular, agreeing in gender with the generic substantive with which it is combined (Article 31.2).

### ***Chironius fuscus*** (Linnaeus, 1758)

Original reference. • [*Coluber*] *fuscus* Linnaeus, 1758: 222.

First use of current binomen. • *Chironius fuscus*: Amaral 1930: 161.

Etymology of epithet. • Latin: *fuscus*, 'dark, blackish, brown'.

Grammatical status of epithet. • Adjective in the nominative singular, agreeing in gender with the generic substantive with which it is combined (Article 31.2).

### ***Chironius gouveai*** Entiauspe-Neto, Lúcio Lyra, Koch, Marques Quintela, Diesel Abegg & Loebmann, 2020

Original reference. • *Chironius gouveai* Entiauspe-Neto, Lúcio Lyra, Koch, Marques Quintela, Diesel Abegg & Loebmann, 2020: 104.

Etymology of epithet. • Patronym of Paulo Roberto Cardoso Gouvêa.

Grammatical status of epithet. • Invariable noun in the genitive (Article 31.1).

### ***Chironius grandisquamis*** (Peters, 1869)

Original reference. • *Spilotes grandisquamis* Peters, 1869: 451.

First use of current binomen. • *Chironius (= Herpetodryas) fuscus grandisquamis*: Wettstein 1934: 32; *Chironius grandisquamis*: Taylor 1951: 95, 96.

Etymology of epithet. • Latin: *grandis*, 'large' and *squama*, 'scale'.

Grammatical status of epithet. • Neologism (in 'modern nomenclatural Latin'): compound adjective in the nominative singular, agreeing in gender with the generic substantive with which it is combined (Article 31.2).

### ***Chironius laevicollis*** (Wied-Neuwied, 1824)

Original reference. • *C*[*oluber*] *laevicollis* Wied-Neuwied, 1824: 666.

First use of current binomen. • *Chironius laevicollis*: Bailey 1955: 18.

Etymology of epithet. • Latin: *laevis*, 'smooth' and *collum*, 'neck'.

Grammatical status of epithet. • Neologism (in 'modern nomenclatural Latin'): compound adjective in the nominative singular, agreeing in gender with the generic substantive with which it is combined (Article 31.2).

### ***Chironius leucometapus*** Dixon, Wiest & Cei, 1993

Original reference. • *Chironius fuscus leucometapus* Dixon, Wiest & Cei, 1993: 123.

First use of current binomen. • *Chironius leucometapus*: Hollis 2006: 445.

Etymology of epithet. • [1] The etymology of this nomen was presented by Dixon *et al.* (1993: 126) as follows: "The subspecies name is derived from the Greek words '*leuco*' meaning white and '*metapon*' meaning forehead or

front". However, there exists no word '*metapon*' in classical Greek! This term is clearly a misspelling of the noun μέτωπον, *metopon*, 'forehead', combined with λευκός, *leukos*, 'white'. Furthermore, the ending *–pus* is not justified, and suggests an etymology from the classical Greek noun πούς, *pous*, 'foot'. The nomen *leucometapus* is therefore the result of both an incorrect etymology and an incorrect latinisation, but Article 32.5.1 of the *Code* expressly states that the latter "are not to be considered inadvertent errors" and should not be corrected. This nomen should therefore be considered as an "arbitrary combination of letters" (Article 11.3) and kept unmodified. [2] Clearly by inattention or as the result of a 'cut-and-paste', Uetz *et al.* (2023) gave in error the adjective *fuscus* as the etymology of this nomen.

Grammatical status of epithet. • Neologism (in 'modern nomenclatural Latin'): compound invariable noun, in apposition to the generic substantive with which it is combined, according to Articles 31.2.1–2 and 34.2.1.

### ***Chironius maculoventris*** Dixon, Wiest & Cei, 1993

Original reference. • *Chironius quadricarinatus maculoventris* Dixon, Wiest & Cei, 1993: 181.

First use of current binomen. • *Chironius maculoventris*: Hollis 2006: 445.

Etymology of epithet. • Latin: *macula*, 'patch, spot' and *venter*, 'belly'.

Grammatical status of epithet. • Neologism (in 'modern nomenclatural Latin'): compound adjective in the nominative singular, agreeing in gender with the generic substantive with which it is combined (Article 31.2).

### ***Chironius monticola*** Roze, 1952

Original reference. • *Chironius monticola* Roze, 1952: 100.

Etymology of epithet. • Latin: *monticola*, 'inhabitant of the mountain'.

Grammatical status of epithet. • Invariable noun, in apposition to the generic substantive with which it is combined (Articles 31.2.1, 34.2.1).

### ***Chironius multiventris*** Schmidt & Walker, 1943

Original reference. • *Chironius multiventris* Schmidt & Walker, 1943: 282.

Etymology of epithet. • Latin: *multus*, 'numerous, plentiful' and *venter*, 'belly'.

Grammatical status of epithet. • Neologism (in 'modern nomenclatural Latin'): compound adjective in the nominative singular, agreeing in gender with the generic substantive with which it is combined (Article 31.2).

### ***Chironius quadricarinatus*** (Boie, 1827)

Original reference. • [*Erpetodryas*] *4dricarinatus* Boie, 1827: 548.

First use of current binomen. • *Chironius quadricarinatus*: Bailey 1955: 15.

Etymology of epithet. • Latin: *quadri-*, from *quattuor*, 'four' and *carinatus*, 'having the form of a ship's hull, careened'.

Grammatical status of epithet. • Neologism (in 'modern nomenclatural Latin'): compound adjective in the nominative singular, agreeing in gender with the generic substantive with which it is combined (Article 31.2).

### ***Chironius scurrula*** (Wagler *in* Spix, 1824)

Original reference. • *Natrix scurrula* Wagler *in* Spix, 1824: 223.

First mention of binomen in current use. • *Chironius scurrulus*: Ruthven, 1922: 65.

First use of correct binomen. • *Chironius scurrula*: *hoc loco*.

Etymology of epithet. • Latin *scurrula*, 'buffoon, Harlequin'.

Grammatical status of epithet. • Invariable noun, in apposition to the generic substantive with which it is combined (Articles 31.2.1, 34.2.1).

***Chironius septentrionalis*** Dixon, Wiest & Cei, 1993

Original reference. • *Chironius multiventris septentrionalis* Dixon, Wiest & Cei, 1993: 173.

First use of current binomen. • *Chironius septentrionalis*: Hollis 2006: 445.

Etymology of epithet. • Latin *septentrionalis*, 'northern'.

Grammatical status of epithet. • Adjective in the nominative singular, agreeing in gender with the generic substantive with which it is combined (Article 31.2).

***Chironius spixii*** (Hallowell, 1845)

Original reference. • *Coluber spixii* Hallowell, 1845: 241.

First use of current binomen. • *Chironius spixii*: Donoso-Barros 1969: 193.

Etymology of epithet. • Patronym of Johann Baptist von Spix (1781–1826).

Grammatical status of epithet. • Invariable noun in the genitive (Article 31.1).

***Chironius vincenti*** (Boulenger, 1891)

Original reference. • *Herpetodryas carinatus* var. *vincenti*: Boulenger, 1891: 355.

First use of current binomen. • *Chironius vincenti*: Schwartz & Thomas 1975: 180.

Etymology of epithet. • Name of the island of Saint Vincent, Lesser Antilles.

Grammatical status of epithet. • Invariable noun in the genitive (Article 31.1).

Comment. • The use of a singular genitive ending in *-i* suggests that this epithet referred to a person. Usually, epithets referring to localities or regions end in *-ensis*, *-ianus*, *-ica*, etc., but there is nothing in the Code that forbids the use of a simple genitive for this purpose.

## Conclusion

Some taxonomists think that the endings of species epithets should always end with the same letter(s), e.g. *-a* or *-us*, as the generic substantive with which they are combined, or at least should agree in grammatical gender with the latter. However, this situation is far from being general. It occurs only when the epithet is (or ends in) a Latin or latinised adjective (e.g., *agilis*, *fuscus*, *pulcher*, *sinensis*, *sinicus*) or a participle (e.g., *frenatus*, *maculatus*, *terminatus*, *deletus*, *delendus*) in the nominative singular (Article 31.2). It does not concern the cases where the epithet is (or ends in) a Latin or latinised noun in apposition, or a noun or adjective in the genitive, or a non-Latin or non-latinised word.

The list above shows that, even in a genus counting not more than 23 species considered valid, a variety of situations can be encountered concerning the grammatical status of the epithet:

Adjective in the nominative singular, agreeing in gender with the generic substantive with which it is combined (Article 31.2). Thirteen epithets: [1] five simple adjectives: *carinatus*, *exoletus*, *foveatus*, *fuscus*, *septentrionalis*; [2] eight compound adjectives: *bicarinatus*, *flavolineatus*, *flavopictus*, *grandisquamis*, *laevicollis*, *maculoventris*, *multiventris*, *quadricarinatus*.

Invariable noun in the genitive (Article 31.1). Five epithets: [1] four based on a person's name: *brazili*, *dixoni, gouveai, spixii*; [2] one based on a geographical name such as that of the type locality: *vincenti.*

Invariable noun, in apposition to the generic substantive with which it is combined (Articles 31.2.1–2, 34.2.1). Five epithets: [1] two based on characters of the taxon: *leucometapus*, *scurrula*; [2] one based on the distribution of the taxon: *monticola*; [3] one based on a geographical name such as that of the type locality: *diamantina*; [4] one based on a person's name: *challenger*.

Thus, only 56.5 % of the epithets of the nomina currently considered valid in this genus are variable and have to agree in gender with the generic substantive with which they are combined, all others being invariable. This percentage is bound to be very different from a zoological genus to another, especially as other situations than those listed above can be encountered (see e.g. Dubois 2018) but it is quite unlikely that, as soon as a genus accomodates more than 10 or 20 species, their epithets will all agree in gender with the generic substantive. In order to avoid errors, which will require corrections and therefore result in 'nomenclatural instability', taxonomists need to be able to distinguish the different grammatical situations regarding epithets. Of course, this requires some basic knowledge in grammar (not properly of Latin language, although it can help), but dealing with zoological nomenclature is dealing with language, and this cannot be done without a minimal care and interest in language, not only in biology and taxonomy.

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