



# Noli tangere nomina probata! Taxonomists must prioritise stability and protection of well-established scientific names in herpetology

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**Abstract.** We remind taxonomists of their responsibilities towards the wider zoological community and urge them to respect the Preamble of the International Code of Zoological Nomenclature, which explicitly ranks stability as more important than priority and relegates the latter to a subservient means to support the former. To make our case, we examine examples of previously stable genus and species nomina in herpetology: some were placed into the synonymy of older, largely unused taxon names under the strict application of the Principle of Priority, disrupting nomenclatural stability, while others escaped this fate because active measures were taken to preserve prevailing usage concept. We highlight the benefits for taxonomists, users of taxonomy and the zoological sciences more generally of seeking to minimize disruption of long-standing, widely used scientific names.

**Key words.** Stability, priority, zoological nomenclature, nomina oblita, nomina protecta, amphibians, reptiles, taxonomy.

## Introduction

Recently, a huge multiauthor team of biologists, consisting of no less than 1563 (!) authors, was sufficiently concerned about the stability of biological nomenclature to publish an impressive collective international appeal (JIMÉNEZ-MEJÍAS et al. 2024). These scientists were troubled by attempts to politicize biological nomenclature on moral and ethical grounds and provided valuable arguments for maintaining nomenclatural stability. The main threats seen by them affected the universality, stability, neutrality and transculturality of biological nomenclature. One of the structures intended to safeguard the stability of scientific nomenclature is the International Code of Zoological Nomenclature (ICZN 1999) whose main purpose is clearly stated in the second paragraph of its Preamble: “The objects of the Code are to promote stability and universality in the scientific names of animals and to ensure that the name of each taxon is unique and distinct. All its provisions and recommendations are subservient to those ends and none restricts the freedom of taxonomic thoughts or actions” (ICZN 1999).

Concepts related to social justice and decolonization were clearly not a consideration at that time, and in herpetology, there is only one recent well-known and widely discussed instance of conflict between social consideration and the Code: RIVAS et al. (2024) described a new

anaconda species and deliberately ignored available names (and thus the entire Code) to select an indigenous common name as its scientific name using the argument that its use by the local population living in the new species’ range predated any name given by “western science” (i.e., any Linnean or other colonial name) by a long time. They proposed that the kind of action they took was long overdue. This paper was heavily criticized for its scientific errors and needless politicization (e.g. WÜSTER et al. 2024).

Stability is clearly the most relevant issue for everyday taxonomic practice, which is why it is listed so prominently at the beginning of the Code. However, the primacy of stability is sometimes challenged by the Principle of Priority (Article 23), one of the means of the Code to promote and to keep stability (MICHENER 1963, MAYR 1969, 1975). Despite explicitly characterized as subservient to the priority of stability, the Principle of Priority poses a problem clearly characterized by SAVAGE & GUYER (1991), who argued, based on their experience with anoline lizards, that an easier procedure to keep well-established taxon names in use should be found, despite the existence of older unused nomina. This was recognised in the fourth edition of the Code (ICZN 1999), in which, in some circumstances, Article 13.9. empowers taxonomists to identify and reject unused senior synonyms that threaten established nomina without recourse to the Commission.

A particular example of conflict between priority and stability has arisen from the phenomenon of “taxonomic vandalism”, the unscientific naming of new taxa for reasons of vanity (JÄCH 2007). Here, unscrupulous authors may speculatively name numerous potentially valid taxa without a robust basis in evidence (JÄCH 2007) or by plagiarizing existing data without personal scientific contribution (DENZER & KAISER 2023). If other authors, through rigorous taxonomic work, later find that some of these taxa indeed require a name, the Principle of Priority then forces them to use the vanity name and thereby confers a measure of scientific immortality to the vandal. In herpetology, this is best exemplified by the unscientific activities of one author whose inflationary descriptions of hundreds new taxa at various categorial levels of classification lack a sound scientific basis. This problematic situation has been discussed by KAISER et al. (2013) and by WÜSTER et al. (2021) who noted that a staggering 1795 (!) taxon names had been created by between 2000 and 2020. New unscientific taxa of agamid lizards were critically evaluated by DENZER et al. (2016) who focused on examples of plagiarism.

Although the issue of taxonomic vandalism has been controversially discussed including by Commissioners of the International Commission on Zoological Nomenclature (e.g. KRELL 2021), the Commission (ICZN 2021) avoided a decision and declined to use its Plenary Power to declare unscientific taxon names unavailable for the purposes of zoological nomenclature. This meant that the Commission, in effect, abdicated its responsibility and returned governance to the herpetological community, risking the emergence of parallel taxonomies. Fortunately, widespread nomenclatural confusion has been avoided in herpetology through near-universal agreement to consider questionable taxon names as outside the permanent scientific record, and the use of aspidonyms (shield names; WÜSTER et al. 2021) to preserve the scientific integrity of the literature (KAISER et al. 2013, WÜSTER et al. 2021). One is reminded of the strong statement by MICHENER (1963), that “In other sciences the work of incompetents is merely ignored, in taxonomy, because of priority, it is preserved”.

Apart from the specific problem of taxonomic vandalism, there are many other instances where a strict application of the Principle of Priority threatens the stability and universality of zoological nomenclature, the very facets it is designed to protect. These instances include the discovery of old, largely or entirely unused, overlooked senior synonymous names published in old works, whose reinstatement could displace nomina in wide and common use. MAYR (1969, 1975) called this “literary archeology” and while there is a place for forensic historical herpetology (sensu O’ SHEA & KAISER 2018) it is critical to keep the nomenclatural perspective in mind (WÜSTER et al. in review). In the following, we discuss selected examples of such excavated scientific names (= potential nomina oblita; Art. 23.9.1.1. ICZN) in herpetology which became a potential or even real threat for nomina which were or still are in prevailing usage.

## Literary archeology

The excavation of such old, forgotten (or nearly forgotten) names concerns genus-group names as well as species-group names. In the following passages we discuss examples where authors acted as “nomenclatural archeologists” either strictly followed the Principle of Priority and threatened or replaced younger names that had been in prevailing usage; and others where authors withstood the temptation to do so, in favour of nomenclatural stability and the protection of well introduced names. Fortunately, the latter category of authors form the majority. In addition, we discuss cases – for species-group names only – where the rediscovery and reassessment of type specimens led to redefinitions of specific identities and nomenclatural confusion.

### Genus-group names

#### Old forgotten names excavated and reinstated

##### *Mesotriton* vs. *Ichthyosaura*

As part of the partition of the genus *Triturus* into four genera, GARCIA-PARIS et al. (2004) removed the genus *Mesotriton* BOLKAY, 1928 from synonymy. When the new combination *Mesotriton alpestris* (LAURENTI, 1768) for the Alpine Newt had already been used in several important works (e.g. RAFFAELLI 2007, HACHTEL et al. 2011) and was well on its way towards prevailing usage, SCHMIDTLER (2009) proposed to replace the genus name *Mesotriton* BOLKAY, 1928 with the older, poorly defined name *Ichthyosaura* SONNINI & LATREILLE, 1801. This genus name was based on a low-quality and de facto unidentifiable drawing in LAURENTI (1768) which served as “iconotype” for his *Proteus tritonius*, described from a cold mountain lake or pond in “alpe Etscher” in Lower Austria. This locality was identified as Mt. Ötscher, and since a pond at that mountain recently contained only Alpine Newt larvae, it was concluded that *Ichthyosaura* must refer to this species (GOLLMANN & GOLLMANN 2010). A careful check of LAURENTI’S (1768) original text revealed, however, that he distinguished “in monte Etschero” and “in alpe Etscher”: the first term indeed references this specific mountain, but the second includes a broader region around the peak (the Latin alpe is the ablative of alpes which is the plural form for the Alps [!]). This means that many more ponds, potentially with additional urodelan species and their larvae have to be taken into consideration when discussing LAURENTI’S (1768) locality. This finding invalidates the geographic argument and renders *Ichthyosaura* a nomen dubium and leaving *Mesotriton* as the only evidence-based genus name for the Alpine Newt (MUTZ & BÖHME 2025).

The replacement of *Mesotriton* by the exhumed *Ichthyosaura* was without any heuristic value, completely superfluous (VENCES 2015), and not helpful in respect to nomenclatural stability (BÖHME & SCHLÜPMANN 2011). By this point, a nomenclatural reversal will also be disruptive since

several works (e.g. GLANDT 2010, THIESMEIER & SCHULTE 2010, GOLLMANN & GOLLMANN 2010, SPEYBROECK et al. 2010) adopted SCHMIDTLER'S (2009) proposal (see BÖHME 2011, MUTZ & BÖHME 2025). However, to resolve the status of *Ichthyosaura* and to facilitate long-term stability, albeit at the expense of short-term instability, a larva of *Salamandra salamandra* (LINNAEUS, 1758) from the area of LAURENTI'S (1768) type locality was designated as the neotype for *Proteus tritonius* LAURENTI, 1768, rendering *Ichthyosaura* a junior synonym of *Salamandra* and not a senior synonym of *Mesotriton* (MUTZ & BÖHME 2025). Therefore, *Mesotriton* is once again the correct genus name for the Alpine Newt.

#### *Amietophrynus* vs. *Sclerophrys*

When the speciose cosmopolitan genus *Bufo* was determined to be paraphyletic and needed to be divided into several genera, FROST et al. (2006) coined the name *Amietophrynus* for the still rather species-rich African clade. This genus name reached common usage over the decade following its naming. Then OHLER & DUBOIS (2016) “unearthed” (in the sense of literary archeology) the name *Sclerophrys capensis* TSCHUDI, 1838 which was based on a single specimen discovered in the Paris Museum. This specimen appeared to agree with the characters defining *Amietophrynus rangeri* HEWITT, 1935. By their interpretation of Article 23.9 (Reversal of Precedence), OHLER & DUBOIS (2016) did not consider *A. rangeri* as meeting the criteria of a nomen protectum, which meant that both its generic and specific epithets became junior synonyms of *S. capensis*. As in the previous example, the strict application of the Principle of Priority does not provide any heuristic value, and this change destabilized the nomenclature of a large group of anurans and continues to impede communication and information retrieval. However, the new concept has nonetheless been followed by numerous authors, so that it currently prevails.

#### *Gecus* vs. *Hemidactylus*

The genus-group name *Gecus* RAFINESQUE-SCHMALTZ (1810) has as its type species type species *Gecus cyanodactylus*, which is, according to MERTENS & WERMUTH (1960), a synonym of *Hemidactylus t. turcicus* (LINNAEUS, 1758). This would threaten the widely and commonly used genus name *Hemidactylus* OKEN, 1817. To avoid this, WERMUTH (1965) proposed to regard *Gecus* as a nomen substitutum of *Gekko* LAURENTI, 1768, thus maintaining nomenclatural stability. However, it is difficult to accept this proposal, since the type locality of *Gecus cyanodactylus* is Sicily, Italy, which makes it impossible to refer this nomen to any species of the South and Southeast Asian genus *Gekko*. Instead, *Gecus* should be classified as a nomen oblitum, and *Hemidactylus* GOLDFUSS, 1820 as a nomen protectum (Art. 23.9.1.2. ICZN).

#### *Hoplocephalus* vs. *Ophiophagus*

The genus name for king cobras had a confusing history until MERTENS (1962) applied to the ICZN in order to designate “*Hamadryas elaps* GÜNTHER, 1858 [equivalent to *H. hannah* CANTOR, 1836]” as the type species of *Ophiophagus* GÜNTHER, 1864. Two years later the ICZN issued Opinion 709 wherein it approved MERTENS'S (1962) application and appeared to have solved the problem. In a recent revision of the genus *Ophiophagus* (DAS et al. 2024), the authors came across nomenclatural problems that had been overlooked since the ICZN published Opinion 709. In two publications related with the results presented in HEINRICH BOIE'S unpublished “Erpétologie de Java”, he (H. BOIE 1828a, 1828b) posthumously applied his manuscript name *Naja bungaroides* to a juvenile king cobra from Java. As no “description or definition” was provided, a requirement laid out in Article 12.1 of the Code, *N. bungaroides* BOIE, 1828 is a nomen nudum. However, WAGLER (1830: 342) used BOIE'S nomen (as *Naja bungaroides*, an incorrect subsequent spelling), and provided a set of diagnostic characters sufficient to make the name available. WAGLER (1830) also proposed a new genus, *Hoplocephalus*, to accommodate *Naja bungaroides*. The genus name *Hoplocephalus* is currently in use for a group of Australian broad-headed snakes, but WAGLER'S (1830) mention created a nomenclatural conundrum. He made the binomen *Naja bungaroides* available for a king cobra, and this taxon is thereby the type species of the genus *Hoplocephalus*. However, the binomen *Naja bungaroides* was introduced a second time, independently, by SCHLEGEL (1837) for material collected by QUOY and GAIMARD in Port Jackson (now Sydney, Australia). Thus, there are two distinct unrelated taxa with identical scientific names.

Considering WAGLER'S (1830) nomen, and using a strict application of the Principle of Priority, *Ophiophagus* GÜNTHER, 1864 is a junior synonym of *Hoplocephalus* WAGLER, 1830 with *bungaroides* as the oldest available species-group name for any king cobra species. The Australian broad-headed snakes currently comprising the genus *Hoplocephalus* would have to be assigned to *Elapocormus* FITZINGER, 1843, the next nomenclaturally available name and one that has not been used since its creation. In this case application of the Principle of Priority would threaten the stability of two high-profile animal groups across two continents. In order to maintain stability and long-standing prevailing usage, an application to the Commission has been submitted (SHEA et al. submitted 2025, Case 3949) asking it to use its Plenary Power to set aside the holotype of *Hoplocephalus bungaroides* WAGLER, 1830 in favour of the lectotype of *Naja bungaroides* SCHLEGEL, 1837, to maintain prevailing usage of the name *bungaroides* for the Australian boad-headed snake. This would remove the unfortunate connection between the king cobra *Naja bungaroides* Boie, 1828, made available as *Hoplocephalus bungaroides* WAGLER, 1830, and the Australian broad-headed snakes, first described as *Naja bungaroides* SCHLEGEL, 1837, allowing the genus nomina *Hoplocephalus* WAGLER, 1830

and *Ophiophagus* GÜNTHER, 1864, including their currently accepted species, to prevail in their current usage.

#### Overwriting established names because of doubtful availability

While the extreme case of the hundreds of unscientific names with weak, missing or plagiarized diagnoses forced herpetologists to overwrite them with scientifically well-founded and properly diagnosed names (aspidonyms), there are a few other examples where names have been overwritten because of questionable availability. The following case is one of them.

#### *Paradactylodon* vs. *Afghanodon* and *Iranodon*

The hynobiid salamander genus *Paradactylodon* was described by RISCH (1984) to accommodate a newly discovered species from Iran and to differentiate it from *Batrachuperus*, its previous generic allocation. Still recognized as valid by RAFFAELLI (2007), the validity of *Paradactylodon* was doubted by DUBOIS & RAFFAELLI (2012) after a quarter of a century because of the supposed lack of a valid diagnosis. These authors replaced this nomen by overwriting it with two new genus names, viz. *Afghanodon* for the Afghan species (*P. mustersi*) and *Iranodon* for the Iranian one (*P. persicus*, including *gorganensis*). The diagnoses given were extremely short and only in tabular form (among the “diagnostic characters” also their suitability as terrarium pets). FROST (2019), however, considered RISCH’s description to be valid so that it was used again in several important works (e.g. STÖCK et al. 2019), *Afghanodon* being recognized as a subgenus at best (see JABLONSKI et al. 2021, BÖHME & JABLONSKI 2022)

#### Species-group names

Potential cases of reinstating forgotten species names (nomina oblita) by excavation

#### *Agama gutturosa* vs. *Bronchocela jubata* and *B. cristatella*

In an attempt to stabilise the nomenclature surrounding the genus *Bronchocela*, in particular the concurrently published names “*Agama Calotes gutturosa* MERREM, 1820” and *A. cristatella* KUHL, 1820, FIGUEROA (2021) designated the animal depicted in SEBA (1734, pl. 89 fig. 1) as the lectotype for both *A. cristatella* and *A. gutturosa*, making the two binomina objective synonyms of each other. Unfortunately, the author was not aware of an earlier publication by MERREM (1819), in which *Agama gutturosa* had already been described and the name made available. As a consequence, the binomen *Bronchocela gutturosa* (Merrem, 1819) has priority over the well-established name *B. cristatella* (KUHL, 1820). DENZER & TILLACK (2024) analysed the

description of this taxon by MERREM (1819) in detail and reported that MERREM’s (1819) description of *A. gutturosa* did not fit *B. cristatella* but *B. jubata* DUMÉRIL & BIBRON, 1837. These authors even discovered a specimen that could have been part of SEBA’s collection and qualify as a type for *A. gutturosa* MERREM, 1819. These findings not only threatened the stability and prevailing usage of *B. cristatella*, but also of *B. jubata*. In both cases the species name *gutturosa* has priority and a new name would have to be found for one or the other well-established species. Under normal circumstances, the Code (Art. 74.1.1.) does not allow retraction of a lectotype designation. However, DENZER & TILLACK (2024) showed that FIGUEROA’s (2021) lectotype designation did not refer to the original description of *A. gutturosa* MERREM, 1819 and the specimens referred to in that publication, such that FIGUEROA’s (2021) nomenclatural act became invalid. DENZER & TILLACK (2024) further showed that the presumed SEBA specimen did not agree in all measurements with those provided by MERREM (1819) so that it could not qualify as part of the type series. In order to stabilize the nomenclature of these taxa, DENZER & TILLACK (2024) reinforced FIGUEROA’s (2021) earlier lectotype designation for *A. cristatella* and demonstrated that *Agama gutturosa* MERREM, 1819 constituted a nomen oblitum. This facilitated a reversal of precedence, allowing the long-standing nomina *Bronchocela cristatella* (KUHL, 1820) and *Bronchocela jubata* DUMÉRIL & BIBRON, 1837 to prevail.

#### *Pseudopus apodus thracicus* vs. *P. Durvillii*

The Balcan-Anatolian clade of the European glass lizard, *Ophisaurus apodus thracicus* OBST, 1978 (type locality Primorsko, Bulgaria), was threatened by *Pseudopus Durvillii* CUVIER, 1829 (type locality “L’Archipel”, Greece). However, this was designated a nomen oblitum by JABLONSKI et al. (2021), thus making *thracicus* OBST, 1978 a nomen protectum (according to Art. 23.9.1.2. ICZN 1999).

#### *Natrix helvetica* vs. *N. tyrolensis*

When KINDLER & FRITZ (2018) found that an Italian clade of *Natrix helvetica* (LACÉPÈDE, 1789) has crossed the Alps into Bavaria, they assigned it preliminarily to the Italian subspecies *N. h. lanzai* KRAMER, 1971, but GLAW et al. (2019) provided evidence that it might also represent a taxon of its own. This led SCHMIDTLER (2019) to consider *Coluber tyrolensis* GMELIN, 1789 as an available name for this population with a subspecies designation as *Natrix helvetica tyrolensis*. However, use of *tyrolensis* could threaten the long-established nomen *helvetica*, which would destabilize the taxonomy of an important species. Fortunately, FRITZ et al. (2020) brought relief and stabilized the current usage of *Coluber helveticus* LACÉPÈDE, 1789 for the barred grass snake, designating *tyrolensis* as a nomen oblitum and *helvetica* as a nomen protectum, according to Art. 23.9.1.2.

*Crocodylus natans*

This nomen has been erected by MEYER (1795) in his “Synopsis Reptilium” with the locality “Inhabitat Ceylonam” [= lives in Sri Lanka]. WERMUTH (1960) suggested that this nomen should be suppressed as it would threaten the well-established *Crocodylus porosus* SCHNEIDER, 1801, whose type locality was restricted by MERTENS (1960) to Ceylon (now Sri Lanka), even though the lectotype designated by WERMUTH (1954) is from India (BAUER & GÜNTHER 2006), and the two extant paralectotypes are from Java, Indonesia (BÖHME 2014). It appears that MERTENS (1960) was unaware that this type material was still in existence, but he adopted WERMUTH’s (1960) view and treated *C. natans* as a nomen oblitum.

Rediscovery of name-bearing types, causing typification and priority problems

*Calotes nasicornis* vs. *Pseudocophotes sumatrana*

*Pseudocophotes sumatrana* (HUBRECHT, 1879) is an extremely rare arboreal agamid from the Greater Sunda Islands, which until recently was known from only two male and two female specimens. Recently, a fifth specimen (the third male) was discovered in the Naturalis collection in Leiden, The Netherlands. However, this specimen is the name bearing type of the previously overlooked name *Calotes nasicornis* VAN DER HOEVEN, 1855. To avoid confusion and to maintain nomenclatural stability, *Calotes nasicornis* was declared as a nomen oblitum under Article 23.9.1., converting *P. sumatrana* into a nomen protectum (DENZER et al. 2021).

*Cnemaspis timoriensis* vs. *Gonatodes humeralis*

*Cnemaspis timoriensis*, originally described as *Gymnodactylus timoriensis* DUMÉRIL & BIBRON, 1836, had a complex nomenclatural history in terms of its generic allocation. This taxon was for a time included in the genus *Gonatodes* when that group was thought to include also comprised Old World taxa (RÖSLER et al. 2019). Old World *Gonatodes* were reassigned to the formerly monotypic genus *Cnemaspis* by SMITH (1933) leading to the combination *Cnemaspis timoriensis*. RÖSLER et al. (2019) suspected that the alleged type locality Timor Island was erroneous and revealed, after close re-examination of the holotype in the Paris Museum, that the specimen was undoubtedly belonging to the Neotropical species *Gonatodes humeralis* GUICHENOT, 1855. Strict application of the Principle of Priority would mandate applying an Asian species name to a widespread South American species, as *Gonatodes timoriensis*, a severe and senseless destabilization of the prevailing usage. But because an existing type specimen is involved, an application to the ICZN Commission was necessary to set aside the type of *C. timoriensis* in favour of sta-

bility, as announced by RÖSLER et al. (2019) with a case announced (but not published) during the same year (ICZN 2019). The formal publication of the case is scheduled for the second half of 2025 (H. RÖSLER, pers. comm.).

*Lacerta agilis orientalis* vs. *L. agilis exigua*

*Lacerta agilis* var. *orientalis* KESSLER, 1878 was a variety of *Lacerta agilis* LINNAEUS, 1758. Since its geographic origin was given as “southeastern European Russia” (KESSLER 1878), this taxon has been considered as a junior synonym of *L. agilis exigua* EICHWALD, 1831 (see MERTENS & WERMUTH 1960). DORONIN & DORONINA (2022) discovered that KESSLER (1878) had based his name on a series of syntypes with different geographic origins deposited in the Zoological Museum of St. Petersburg, meaning that his “variant” of *L. agilis* could potentially not only be regarded as a junior synonym of *L. a. exigua*, but also as a senior synonym threatening the widely used names *L. a. brevicaudata* PETERS, 1958 and *L. a. grusinica* PETERS, 1960. In order to clarify this situation, DORONIN & DORONINA (2022) designated KESSLER’s (1878) syntype from Pyatigorsk, SE Russia, as the name-bearing lectotype. As a result, *L. agilis orientalis* is now a junior synonym of *L. a. exigua*, and the remaining Armenian syntypes became paralectotypes without name-bearing function. This action supported nomenclatural stability of the infraspecific taxonomy of *L. agilis*.

*Lacerta composita* vs. *L. mixta*

MÉHELY (1909) used the first of these two nomina as a provisional name for a specimen he regarded to be a hybrid between two species of Caucasian rock lizards (currently in the genus *Darevskia*) and added (our translation): “Should [this specimen] turn out to be a separate species, I would name it *Lacerta composita*”. According to Art. 15.1., provisional names when published before 1961, can be considered available, and because this name was accompanied by a rather detailed diagnosis, DORONIN (2018) considered it an available name under Art. 11. However, this conclusion could threaten the name *Lacerta mixta* MÉHELY, 1909, which the author likewise regarded as a hybrid between two other species and selected the name accordingly. *Lacerta composita* had never been used as a valid name while *L. mixta* was in wide use, prompting DORONIN (2018) to regard the former as a nomen oblitum and the latter, currently regarded as a normal bisexual, non-hybrid species of *Darevskia*, as a nomen protectum. However, Article 23.9.1. applies only to names erected before 1900 and both *L. mixta* and *L. composita* were published in 1909. To stabilize the nomenclature of the species, we here invoke Art. 24.2.1. (Principle of the First Reviser) (Art 24.2.1., ICZN 1999) and give nomenclatural precedence to the widely used name *Lacerta mixta* MEHELY, 1909 over *Lacerta composita* MEHELY, 1909.

*Pedioplanis undata* vs. *P. lineocellata*

*Lacerta undata* SMITH, 1838 (currently *Pedioplanis undata*) is a widespread lacertid lizard in southwestern Africa (FITZ SIMONS 1943, BRANCH 1988, CHILDERS et al. 2021). It was placed into the genus *Eremias* WIEGMANN, 1834 by DUMÉRIL & BIBRON (1839), and into *Mesalina* GRAY, 1838 by SHCHERBAK (1975) who was obviously unaware of BALLETTTO'S (1968) earlier paper. BALLETTTO had already applied the Principle of the First Reviser to choose the name *Pedioplanis* FITZINGER, 1843 (type species *P. burchelli*), out of three equally available and simultaneously published names in FITZINGER, 1843, the other two nomina being *Choroscopus* (type *P. lineocellata*) and *Eudioptra* (type *P. undata*). However, BOULENGER (1921) noted that the descriptions of this species by SMITH (1838) and later by DUMÉRIL & BIBRON (1839) who had borrowed SMITH'S specimens (BOULENGER 1921), did not refer to what was universally understood as *P. undata*, but to *P. pulchella* (GRAY, 1845) (see CHILDERS et al. 2021). BOULENGER further noted that no true *undata* was among the specimens donated by SMITH to the London Natural History Museum. One specimen in this museum, the so-called "Lord DERBY specimen", briefly described by GRAY (1845), was erroneously suspected to be a possible type of SMITH'S (1838) taxon by BOULENGER (1910), but its locality "S. Africa" must be wrong because *P. undata* occurs only in Namibia. This specimen was not among those on which SMITH (1838) had based his description. So, SMITH'S (1838) material was regarded lost.

Since ANDREW SMITH had close connections to Scotland (SCHNEIDER 2015), we examined the type catalogue of the Royal Scottish Museums in Edinburgh (HERMAN et al. 1990) which did indeed include type material of seven taxa described by A. SMITH, but missing any types of *Lacerta undata*. A closer inspection of the Edinburgh lacertid material, however, led to the rediscovery of two syntypes of *Lacerta undata*, one of which agrees in detail with SMITH'S (1838) accompanying figure. Thus, BOULENGER'S (1910) suspicion that this name was in fact based on specimens of what was later for many years the current name for *Pedioplanis lineocellata pulchella* (currently *P. pulchella*: CHILDERS et al., 2021) proved to be correct. A strict application of the Principle of Priority would have resulted in the renaming of several well-known forms of *Pedioplanis* and would have thus caused great confusion. In order to prevent this nomenclatural instability and to retain current usage, MAYER & BÖHME (2000) submitted an application to the Commission and requested suppression of SMITH'S (1838) rediscovered syntypes and to allow replacement with a neotype. This application was granted (ICZN 2002) and because the specimens involved have never been documented or figured after SMITH'S (1838) description, an illustrative documentation of the rediscovered type specimens as compared with the original drawing was recently published, including a figure of the neotype from the collection of the Natural History Museum of Vienna (NMW 31886) (BÖHME 2024).

*Zootoca vivipara*: JACQUIN vs. LICHTENSTEIN:

The world's most widespread terrestrial reptile, famous because of its bimodal (viviparous and ovoviviparous) reproduction, was first mentioned in the post-Linnean literature in a text by JACQUIN (1787) as "*Lacerta vivipara*". This author remained the taxon authority of the binomen for 22 decades until a careful check of the Latin text revealed that JACQUIN (1787) was not describing a new species, but the phenomenon of viviparity (i.e., the lizard with viviparous reproduction: BÖHME & RÖDDER 2006). Strict application of the Principle of Priority would have forced the use of the next-oldest name, *Lacerta oedura* SHEPPARD, 1804 (*Lacertus cinereus* LACÉPÈDE, 1788 was named as a work rejected by the Commission for the purposes of zoological nomenclature: ICZN 2005) which would have been catastrophic in the case of such a well-known species with many hundreds of references under its first, albeit unintended name. The solution for maintaining stability was to search for the earliest author using the name *vivipara* in a taxonomic and nomenclatural sense. This was LICHTENSTEIN (1823). For details see SCHMIDTLER & BÖHME (2011).

*Varanus gouldii* vs. *V. panoptes*

34 years ago, one of us (WB) caused some nomenclatural problems himself in the case of the Australian monitor lizard *Varanus gouldii* (GRAY, 1838) (BÖHME 1991). After the description of a putative sibling species from NW and W Australia (STORR 1980) as *Varanus panoptes*, WB recognized that the lectotype of *Hydrosaurus gouldii* GRAY, 1831 designated by MERTENS (1958) and based on a taxidermy mount in the Natural History Museum London, was identical with STORR'S (1980) new species. By strict application of the Principle of Priority, *V. panoptes* would be regarded as a junior synonym of *V. gouldii*. Its three subspecies, *V. p. panoptes*, *V. p. rubidus* and *V. p. horni* would have to be transferred to *gouldii*, thus restricting the name *gouldii* to the much smaller area of the former *V. panoptes*. By this action, the former pan-Australian *V. gouldii*, a binomen in use for 190 years, became nameless. The next available name for this widely distributed species, as proposed by BÖHME (1991), was its former subspecies, *V. gouldii flavirufus* MERTENS, 1958, making *V. flavirufus* the new species name. Subsequently, SPRACKLAND et al. (1997) applied to the Commission and requested suppression of MERTENS'S (1958) lectotype designation and replacement with a neotype, which was granted (ICZN 2000). Unfortunately, WEIJOLA et al. (2015) now repeated WB'S former mistake after 25 years.

*Varanus indicus* vs. *V. chlorostigma*

DAUDIN (1802) described his *Tupinambis indicus* (currently *Varanus [Euprepiosaurus] indicus*) from the Moluccan island Ambon, Maluku Province, Indonesia, and provided

an illustration. The specimen was subsequently lost. It later emerged that *V. indicus* represented a species complex consisting of several cryptic species (e.g. ZIEGLER et al. 2007, BÖHME et al. 2019, WEIJOLA et al. 2020), so that designation of a neotype was warranted. One juvenile voucher specimen labelled as coming from Ambon (ZFMK 70651) was therefore designated as the neotype of *T. indicus* DAUDIN, 1802 (PHILIPP et al. 1999). At the same time, a second, morphologically different phenotype was documented by sympatric voucher specimens from Ambon, which were morphologically congruent with specimens from neighbouring Seram Island and were described as a new species *Varanus cerambonensis* PHILIPP et al., 1999. WEIJOLA (2015) reported that he was unable to find additional examples of *V. indicus* (sensu PHILIPP et al. 1999) on Ambon, only *V. cerambonensis*, and concluded that the neotype locality must be in error. He applied the name *V. indicus* only to the monitor lizards from Ambon and Ceram and placed *cerambonensis* into the synonymy of *indicus*. Unfortunately, WEIJOLA (2015) disregarded one important distinguishing character of *cerambonensis*, namely the light temporal stripe that is missing in *Varanus indicus* and also on DAUDIN'S (1802) excellent illustration (see PHILIPP et al. 1999, BÖHME et al. 2016). *Varanus indicus* thus became an endemic species of the southern Moluccas, while all populations of the large range of the former *V. indicus* (sensu DAUDIN 1802; see PHILIPP et al. 1999) lost their name which had been used in countless publications over the last two centuries. WEIJOLA (2015) applied to the Commission for resurrection of *Monitor chlorostigma* GRAY, 1831 and the Commission ruled again in favour of the applicant (ICZN 2020), thus supporting strong instability in the nomenclature of this monitor lizard group.

#### *Vipera illyrica* vs. *V. ammodytes*

LINNAEUS (1758) described *Coluber ammodytes*, with “Habitat in Oriente” as the only type locality indication. LAURENTI (1768) then described *Vipera illyrica*, with the geographical origin given as “Habitat in Illyriae montosis, maxime circa Castel de Duino” [“Lives in the mountainous regions of the northwestern Balkans, especially around Castel de Duino”]. The name has been considered a synonym of *V. ammodytes* in most of the literature, except for a few mostly 20<sup>th</sup> century publications that regarded it as denoting a distinct subspecies or “substrate race” of *V. ammodytes* (e.g. SOCHUREK 1983, SCHWEIGER 1992), but always in parallel with the nominate form, *V. a. ammodytes*. The type locality of *V. ammodytes* was long assumed to lie in the northwestern parts of its distribution range, in Croatia or northeastern Italy. On that basis BOULENGER (1903, 1904, 1913) described the subspecies *meridionalis*, *montandoni* and *transcaucasiana* from the southern, eastern and Anatolian/Caucasian parts of the range of the species, respectively. This classification has been used consistently (with minor variants) since 1913, and each of the subspecies has accumulated hundreds of uses in the literature. Both, *V. a.*

*ammodytes* and *V. a. meridionalis*, have become especially prominent in the toxinological literature. SCHWARZ (1936) invalidly restricted the type locality of *V. ammodytes* to Zara (now Zadar), Dalmatia, Croatia. BRUNO (1968) selected the Linnaean specimen UPSZTY 95 as lectotype and restricted the type locality to Castello Nuovo di Duino, near Trieste, Friuli-Venezia Giulia, northeastern Italy, based on his interpretation of its likely origin.

However, KRECSÁK et al. (2024), determined that UPSZTY 95 had in fact been collected in Belgrad Forest (Belgrad Ormanı), just west of Istanbul, in Turkish Thrace, and confirmed through morphometric analysis that the specimen is consistent with this origin. The nose-horned viper taxon known from the Istanbul area is what has long been known as *V. a. montandoni*, not *V. a. ammodytes*. Under the default implementation of the Code, what was *V. a. montandoni* would become *V. a. ammodytes*, whereas what has for over a century and through over 600 literature uses been known as *V. a. ammodytes* would now take on the virtually unused name *V. a. illyrica* LAURENTI, 1768, for which these authors designated a neotype (KRECSÁK et al. 2025a, b). This change, and particularly the transfer of the subspecific name *ammodytes* from the northwestern to the eastern populations, would cause major problems for the analysis of the very extensive literature on this complex.

Article 75.6 of the Code explicitly urges authors making such discoveries to “maintain prevailing usage [Art. 82] and request the Commission to set aside under its plenary power [Art. 81] the existing name-bearing type and designate a neotype”, and Recommendation 1 in Appendix B of the Code specifically warns that “it is of special importance that a name should not be transferred to a taxon distinct from that to which it is generally applied”, which is what would happen to the name *ammodytes* in this case. Unfortunately, KRECSÁK et al. (2024) did not follow these recommendations, and merely suggested that others could do so if the proposed changes were “deemed disruptive”. Several of us have begun this process (WÜSTER et al. in review), and therefore, in accordance with Article 82, we encourage others working on the *Vipera ammodytes* complex to retain prevailing usage in the expectation of a ruling by the Commission. This case is discussed in much more detail, together with a general plea for nomenclatural parsimony by WÜSTER et al. (in review).

#### *Sistrurus catenatus* vs. *S. tergeminus*

The names *Sistrurus catenatus* (RAFINESQUE, 1818) and *S. tergeminus* (SAY in JAMES, 1823) have a long history of use for the eastern and western massasauga rattlesnake, respectively, either as subspecies of *S. catenatus* or, since KUBATKO et al. (2011), as separate species. When researching the history of these taxon names, HOLYCROSS et al. (2008) found that the collection locality of the (missing) type of *Crotalinus catenatus* RAFINESQUE, 1818 is almost certainly located in eastern Nebraska, within the range of *S. tergeminus*. Strict application of the Code would result in the

transfer of the name *catenatus* to the western massasauga (contrary to Recommendation 1, Appendix B of the Code), while the eastern massasauga would become *Sistrurus massasaugus* (KIRTLAND, 1838). This would have dramatically destabilised the nomenclature of two high-profile species covered by an extensive body of literature. To prevent this confusion, CROTHER et al. (2011) petitioned the International Commission to designate neotypes for both *S. catenatus* and *S. tergeminus* to preserve prevailing usage. The Commission consented, thus conserving the stability of two taxa that had attracted over 1600 users in the literature between them (ICZN 2013), and that would have been upended had HOLYCROSS et al. (2008) and CROTHER et al. (2011) not involved the Commission.

### Conclusion

The plea for protection of long-established names against rediscovered older but largely or entirely unused nomina does of course not mean that these latter names should be ignored. On the contrary, if first erected on a serious, sound scientific basis, they should be identified but at the same time evaluated for their possible destabilizing effect on well-known names in widespread prevailing use. The value of research into the history of herpetology and herpetological nomenclature should not be measured through the changes it imposes on the use of scientific nomenclature today. Instead, responsible “nomenclatural archeologists” should regard stability of nomenclature as a key priority for the rest of biodiversity sciences. Rather than rejoicing over changes to the nomenclature imposed by their work, nomenclatural historians should take pride in their efforts to preserve nomenclatural stability while resolving complex historical problems. Changes to scientific names complicate knowledge exchange and information retrieval, which is, frankly, irresponsible in the Century of Extinctions.

### Epilogue

To put the entire discussion above into perspective, we should like to conclude with the following classical quote from WILLIAM SHAKESPEARE’s *Romeo and Juliet*:

“What’s in a name? That which we call a rose/  
By any other name would smell as sweet.”

### References

- BALLETTO, E. (1968): Contributo alla biogeografia della Somalia. – *Bolletino del Museo e Istituto de Biologia, Università di Genova*, **36**(248): 191–280.
- BAUER, A. M. & R. GÜNTHER (2006): An annotated catalogue of the types of crocodylians (Reptilia: Crocodylia) in the collection of the Museum für Naturkunde der Humboldt-Universität zu Berlin (ZMB). – *Mitteilungen aus dem Museum für Naturkunde in Berlin, Zoologische Reihe*, **82**: 243–247.
- BÖHME, W. (1991): The identity of *Varanus gouldii* (Gray, 1838), and the nomenclature of the *V. gouldii* species complex. – *Mertensiella*, **2**: 38–41.
- BÖHME, W. (2011): Review of Thiesmeier, B. & U. Schulte (2010): *Der Bergmolch – im Flachland wie im Hochgebirge zu Hause*, Bielefeld, Laurenti-Verlag. – *Salamandra*, **47**: 59.
- BÖHME, W. (2014): Herpetology in Bonn. – *Mertensiella*, **21**: 1–256.
- BÖHME, W. (2020): Book Review: ANDRÄ, E., ASSMANN, O., DÜRST, T. HANSBAUER, G. & A. ZAHN (2019): *Amphibien und Reptilien von Bayern*. Eugen Ulmer-Verlag, Stuttgart. – *Koenigiana*, **14**: 119–120.
- BÖHME, W. (2024): Der taxonomische Wirrwarr um den südwestafrikanischen Wüstenrenner *Pedioplanis undata* (A. Smith, 1838) – eine nachträgliche Dokumentation. – *Die Eidechse*, **35**: 2–7.
- BÖHME, W. & D. JABLONSKI (2022): Making forgotten information available. An early study of the Afghan mountain salamander. – *Bonn zoological Bulletin*, **71**: 1–7.
- BÖHME, W., H. J. JACOBS, T. KOPPETSCH & A. SCHMITZ (2019): The Kei Islands monitor lizard (Squamata: Varanidae: *Varanus: Euprepiosaurus*) as a distinct morphological, taxonomic, and conservation unit. – *Russian Journal of Herpetology*, **26**: 272–280.
- BÖHME, W., A. KOCH & T. ZIEGLER (2016): Comment on the proposed conservation of *Tupinambus indicus* Daudin, 1802 (currently *Varanus indicus*; Reptilia, Squamata) by replacement of the neotype (Case 3676; see BZN 72: 134–140). – *Bulletin of zoological Nomenclature*, **73**: 55–58.
- BÖHME, W. & D. RÖDDER (2006): Zum „Reptil des Jahres 2006“ – die eurasische Wald- oder Bergeidechse (*Zootoca vivipara*), das erfolgreichste terrestrische Reptil der Welt. – *Reptilia*, **11**: 55–60.
- BÖHME, W. & M. SCHLÜPMANN (2011): Übersicht über die Amphibien- und Reptilienarten in NRW – kommentierte taxonomische Liste. – pp. 82–92 in: HACHTEL, M., M. SCHLÜPMANN, K. WEDDELING, B. THIESMEIER, A. GEIGER & C. WILLIGALLA (eds): *Handbuch der Amphibien und Reptilien Nordrhein-Westfalens*. Band 1. – Bielefeld (Laurenti-Verlag), 896 pp.
- BOIE, H. (1828a): *Uittreksels uit brieven van Heinrich Boie van Java aan H. Schlegel, Conservator Animalium Vertebratorum aan’s Rijks Museum te Leyden*. – *Bijdragen tot de Natuurkundige Wetenschappen*, **3**: 231–252.
- BOIE, H. (1828b): *Auszüge aus Briefen von Heinr. Boie zu Java*. – *Isis von Oken*, **21**: columns 1025–1035.
- BOULENGER, G. A. (1903): On the geographical variants of the sand-viper, *Vipera ammodytes*. – *Proceedings of the Zoological Society of London*, **1903**: 185–186.
- BOULENGER, G. A. (1904): On the sand-viper of Roumania (*Vipera ammodytes* var. *Montandoni*). – *Annals and Magazine of Natural History*, **14**: 134–135.
- BOULENGER, G. A. (1913): On the geographical races of *Vipera ammodytes*. – *Annals and Magazine of Natural History*, **11**: 283–297.
- BOULENGER, G. A. (1921): *Monograph of the Lacertidae II*. – London (Trustees of the British Museum London), 451 pp.
- BRANCH, W. R. (1988): *Field guide to the snakes and other reptiles of South Africa*. – London (New Holland Publications), 328 pp.

- BRUNO, S. (1968): Sulla *Vipera ammodytes* (Linnaeus, 1758) in Italia. – *Memorie del Museo Civico di Storia Naturale di Verona*, **15**: 289–336.
- CANTOR, T. E. (1836): Sketch of an undescribed hooded serpent, with fangs and maxillar teeth. – *Asiatic Researches*, **19**: 87–93.
- CHILDERS, J. L., S. KIRCHHOF & A. M. BAUER (2021): Lizards of a different stripe: phylogenetics of the *Pedioplanis undata* complex (Squamata, Lacertidae), with the description of two new species. – *Zoosystematics and Evolution*, **97**: 249–272.
- CROTHER, B. I., J. M. SAVAGE & A. T. HOLYCROSS (2011): *Crotalinus catenatus* Rafinesque, 1818 (currently *Sistrurus catenatus*) and *Crotalus tergeminus* Say in James, 1822 (currently *Sistrurus tergeminus*; Reptilia, Serpentes): proposed conservation of usage by designation of neotypes for both species. – *Bulletin of Zoological Nomenclature*, **68**: 271–274.
- DAS, I., P. GOWRI SHANKAR, P. SWAMY, R. C. WILLIAMS, H. T. LALREMSANGA, P. PRASHANTH, G. SAHOO, S. P. VIJAYAKUMAR, J. HÖGLUND, K. SHANKER, S. K. DUTTA, S. R. GANESH & W. WÜSTER (2024): Taxonomic revision of the of the king cobra *Ophiophagus hannah* (Cantor, 1836) species complex (Reptilia Serpentes: Elapidae), with the description of two new species. – *European Journal of Taxonomy*, **961**: 1–51.
- DENZER, W., H. COGGER & W. BÖHME (2020): *Lacerta varia* – and then they were four: multiple use of the same species name for various lizards (Squamata: Lacertidae, Teiidae, Varanidae). – *Salamandra*, **56**: 355–361.
- DENZER, W., E. DONDORP, T. KOPPETSCH, K. LAHAISE, U. MANTHEY, M. MOSTADIUS & W. BÖHME (2021): Nomenclatural and morphological notes on the rare draconine agamid lizard *Pseudocophotis sumatranus* (Hubrecht, 1879) (Sauria: Agamidae: Draconinae). – *Bulletin of the Raffles Museum*, **69**: 448–462.
- DENZER, W., U. MANTHEY, P. WAGNER & W. BÖHME (2016): A critical review of Hoser's writings on Draconinae, Amphibolurinae, *Laudakia* and Uromastycinae (Squamata: Agamidae). – *Bonn zoological Bulletin*, **64**: 117–138.
- DENZER, W. & F. TILLACK (2024): The original description of *Agama gutturosa* Merrem, 1819 and its nomenclatural implication on the genus *Bronchocela* Kaup, 1827 (Squamata. Agamidae). – *Zootaxa*, **5507**: 337–355.
- DORONIN, I. V. (2018): The taxonomic status of *Lacerta composita* Méhely, 1909 (Squamata: Sauria: Lacertidae). – *Russian Journal of Herpetology*, **25**: 143–146.
- DORONIN, I. V. & M. A. DORONINA (2022): Taksonomicheskij status *Lacerta agilis* var. *orientalis* Kessler, 1878 (Sauria: Lacertidae). – *Trudy Zoologicheskogo Instituta RAN*, **326**: 23–29.
- DUBOIS, A. & J. RAFFAËLLI (2012): A new ergotaxonomy of the order Urodela Duméril, 1805 (Amphibia, Batrachia). – *Alytes*, **28**: 77–161.
- DUMÉRIL, A. M. C., G. BIBRON & A. H. A. DUMÉRIL (1839): *Erpétologie générale ou histoire complète des reptiles*. – Vol. V., Paris (Librairie Encyclopédie Roret), 854 pp.
- FIGUEROA, A. (2021): The type species of *Bronchocela* Kaup, 1827 and lectotype designations for *Agama cristatella* Kuhl, 1820 and *Agama gutturosa* Merrem, 1820 (Squamata: Iguania: Agamidae). – *Zootaxa*, **4980**: 397–400.
- FITZINGER, L. (1843): *Systema Reptilium. Fasciculus Primus. Amblyglossae*. – Vindobonae (Braumuller et Seidel), 106 + ix pp.
- FITZSIMONS, V. F. M. (1943): The lizards of South Africa. – *Memoirs of the Transvaal Museum*, **1**: 1–528.
- FRITZ, U., E. RAZZETTI & J. F. SCHMIDTLER (2020): The valid scientific names of the barred grass snake and its subspecies from mainland Italy and Sicily. – *Amphibia-Reptilia*, **41**: 553–558.
- FROST, D. R. (2019): *Amphibian species of the world*. An online reference. Version 6.0. American Museum of Natural History, New York, USA. – <http://research.amnh.org/herpetology/amphibia/index.html>.
- FROST, D. R., T. GRANT, J. FAIVOVICH, R. H. BAIN, A. HAAS, C. B. HADDAD, R. O. DE SÀ, A. CHANNING, M. WILKINSON, S. C. DONNELLAN, C. J. RAXWORTHY, J. A. CAMPBELL, B. L. BLOTTO, P. MOLER, R. C. DREWES, R. A. NUSSBAUM, J. D. LYNCH, D. M. GREEN & W. C. WHEELER (2006): *The Amphibian Tree of Life*. – *Bulletin of the American Museum of Natural History*, **297**: 1–370.
- GARCIA PARIS, M., A. MONTORI & P. HERRERO (2004): Amphibia, Lissamphibia. – pp. 1–640 in: RAMOS, M. A., J. ALBA-TERCEDOR, X. BELLÉ, J. GOSÁLBEZ, A. GUERRA, E. MACPHERSON, J. SERRANO & J. TEMPLADO (eds): *Fauna Ibérica*, vol. 24. – Madrid (Museo Nacional de Ciencias Naturales, Consejo Superior de Investigaciones Científicas (CSIC)), 640 pp.
- GLANDT, D. (2010): *Taschenlexikon der Amphibien und Reptilien Europas*. – Wiebelsheim (Quelle & Meyer), 633 pp.
- GLAW, F., M. FRANZEN, M. OEFELE, G. HANSBAUER & C. KINDLER (2019): Genetischer Erstnachweis, Identität und südaltine Herkunft der Barrenringelnatter (*Natrix helvetica*) in Bayern. – *Zeitschrift für Feldherpetologie*, **26**: 1–20.
- GOLLMANN, G. & B. GOLLMANN (2010): In alpe Etscher: Auf der Jagd nach *Ichthyosaura*. – *Zeitschrift für Feldherpetologie*, **17**: 237–239.
- GRAY, J. E. (1845): *Catalogue of the specimens of lizards in the collection of the British Museum*. – London (by Orders of the Trustees), xxviii + 289 pp.
- GÜNTHER A. C. L. G. (1858): *Catalogue of colubrine snakes in the collection of the British Museum*. – London (Trustees of the British Museum), xvi + 281 pp.
- GÜNTHER, A. C. L. G. (1864): *The reptiles of British India*. – London (Ray Society), xxvii + 452 pp. + 26 pl.
- HACHTEL, M., M. SCHLÜPMANN, K. WEDDELING, B. THIESMEIER, A. GEIGER & C. WILLIGALLA (eds) (2011): *Handbuch der Amphibien und Reptilien Nordrhein-Westfalens*, Vols. 1 & 2. – Laurenti-Verlag, Bielefeld, 1296 pp.
- HERMAN, J. S., R. Y. MCGOWAN & G. N. SWINNEY (1990): *Catalogue of the type specimens of recent vertebrates in the National Museums of Scotland*. – National Museums of Scotland Information Series, **4**: 1–34.
- HOLYCROSS, A. T., T. G. ANTON, M. E. DOUGLAS & D. R. FROST (2008): The type localities of *Sistrurus catenatus* and *Crotalus viridis* (Serpentes: Viperidae), with the unraveling of a most unfortunate tangle of names. – *Copeia*, **2008**: 421–424.
- ICZN (1964) Opinion 709. *Dendraspis* Fitzinger, 1843 (Reptilia): suppressed under the Plenary Powers. – *Bulletin of Zoological Nomenclature*, **21**: 210–211.
- ICZN (1999): *International Code of Zoological Nomenclature*. – London (International Trust for Zoological Nomenclature), 306 pp.
- ICZN (2000) Opinion 1948. *Hydrosaurus gouldii* Gray, 1838 (currently *Varanus gouldii*) and *Varanus panoptes* Storr, 1980 (Reptilia, Squamata): specific names conserved by the designation of a neotype for *H. gouldii*. – *Bulletin of Zoological Nomenclature*, **57**: 63–65.

- ICZN (2002): Opinion 1992 (Case 3085). *Lacerta undata* A. Smith, 1838 (currently *Pedioplanis undata*; Reptilia: Sauria): specific name conserved by the designation of a neotype. – Bulletin of Zoological Nomenclature, **59**: 60.
- ICZN (2005): Opinion 2104 (Case 3226). Lacépède, B.G.É de la V., 1788, Histoire Naturelle des Quadrupèdes ovipares: rejected as a non-binominal work. – Bulletin of Zoological Nomenclature, **62**: 55.
- ICZN (2013): Opinion 2328 (Case 3571). *Crotalinus catenatus* Rafinesque, 1818 (currently *Sistrurus catenatus*) and *Crotalus tergeminus* Say in James, 1822 (currently *Sistrurus tergeminus*; Reptilia, Serpentes): usage conserved by designation of neotypes for both species. – Bulletin of Zoological Nomenclature, **70**: 282–283.
- ICZN (2019): Notice of new applications to the Commission (cases 3797–3812). – Bulletin of Zoological Nomenclature, **76**: 98–99.
- ICZN (2020): Opinion 2451 (Case 3637) – *Tupinambis indicus* Daudin, 1802 (currently *Varanus indicus*; Reptilia, Squamata): specific name conserved. – Bulletin of Zoological Nomenclature, **77**: 57–58.
- ICZN (2021): Opinion 2468 (Case 3601) – *Spracklandus* Hoser, 2009 (Reptilia, Serpentes, Elapidae) and Australasian Journal of Herpetology issues 1–24: Confirmation of availability declined; Appendix A (Code of Ethics): not adopted as a formal criterion for ruling on cases. – Bulletin of Zoological Nomenclature, **78**: 42–45.
- JABLONSKI, D., A. BASIT, J. FAROOQI, R. MASROOR & W. BÖHME (2021b): Biodiversity research in a changing Afghanistan. – Science, **372**(6549): 1402.
- JABLONSKI, D., M. A. RIBEIRO-JÚNIOR, S. MEIRI, E. MAZA, O. V. KUKUSHKIN, M. CHIRIKOVA, A. PIROSOVÁ, D. JELIĆ, P. MIKULIČEK & D. JANDZIK (2021a): Morphological and genetic differentiation in the anguid lizard *Pseudopus apodus* supports the existence of an endemic subspecies in the Levant. – Vertebrate Zoology, **71**: 175–200.
- JÄCH, M. A. (2007): Vandalism in taxonomy. – Koleopterologische Rundschau, **77**: 38, 88 + 146.
- JACQUIN, J. F. VON (1787): *Lacerta vivipara*, observatio Jos. Francisci de Jacquin. – Annales Helveticae, **3**: 33–34.
- JIMÉNES-MEJÍAS, P., S. MANZANO, V. GOWDA, F.-T. KRELL, M.-Y. LIN, S. MARTÍN-BRAVO, L. MARTÍN-TORRIJOS, G. NIETO FELINER, S. L. MOSYAKIN, R. F. C. NACZI, C. ACEDO, I. ÁLVAREZ, J. V. CRISCI, M. LUCEÑO-GARCÉS, J. MANNING, J. C. MORENO SAIZ, A. M. MUASYA, R. RIINA, A. SÁNCHEZ MESEGUER, D. SÁNCHEZ-MATA, and 1543 additional coauthors (2024): Protecting stable biological nomenclatural systems enables universal communication: A collective international appeal. – BioScience, **74**: 467–472.
- KAISER, H., B. I. CROTHER, C. M. R. KELLY, L. LUISELLI, M. O'SHEA, H. OTA, P. PASSOS, W. D. SCHLEIP & W. WÜSTER (2013): Best practices: in the 21<sup>st</sup> Century, taxonomic decisions in herpetology are acceptable only when supported by a body of evidence and published via peer-review. – Herpetological Review, **44**: 8–23.
- KESSLER, K. [F.] (1878): Puteshestviye po Zakavkazkomu krayu v 1875 godu s zoologicheskoy tselyu. – Trudy Sankt-Peterburgskogo obshchestva A. Beketova, Sankt Peterburg (Tipografia Stasyulevicha), vol. 8: 1–200.
- KINDLER, C. & U. FRITZ (2018): Phylogeography and taxonomy of the barred grass snake (*Natrix helvetica*), with a discussion of the subspecies category in zoology. – Vertebrate Zoology, **68**: 269–281.
- KLAVER, C. & W. BÖHME (1986): Phylogeny and classification of the Chamaeleonidae (Sauria) with special reference to hemipenis morphology. – Bonner zoologische Monographien, **22**: 1–64.
- KRECSÁK, L., A. M. BAUER, A. WESTERSTRÖM, R. WAHLGREN, I. TOMOVIĆ, B. STILLE & E. ÅHLANDER (2024): Assessment of the Linnaean type material of the nose-horned viper, *Vipera ammodytes* (Linnaeus, 1758). – Zootaxa, **5537**: 24–48.
- KRECSÁK, L., A. M. BAUER, L. TOMOVIĆ, S. SCHWEIGER & A. WESTERSTRÖM (2025a): The history of the Illyrian Nose-horned Viper, *Vipera ammodytes illyrica* (Laurenti, 1768), with designation of a neotype. – Salamandra, **61**: 184–194.
- KRECSÁK, L., A. M. BAUER, L. TOMOVIĆ, S. SCHWEIGER & A. WESTERSTRÖM (2025b): A valid neotype designation for *Vipera illyrica* Laurenti, 1768. – Salamandra, **61**: 362–363.
- KRELL, F.-T. (2021): Suppressing works of contemporary authors using the Code's publication requirements is neither easy nor advisable. – Bulletin of zoological Nomenclature, **78**: 61–67.
- KUBATKO, L. S., H. L. GIBBS & E. W. BLOOMQUIST (2011): Inferring species-level phylogenies and taxonomic distinctiveness using multilocus data in *Sistrurus* rattlesnakes. – Systematic Biology, **60**: 393–409.
- KUHL, H. (1820) Beiträge zur Zoologie und vergleichenden Anatomie. Erste Abtheilung. – Frankfurt (Hermannsche Buchhandlung), ii + 151 + 1 pp., 7 pls.
- LAURENTI, J. N. (1768): Specimen medicum exhibens synopsis reptilium emendatam cum experimentis circa venena et antidota reptilium Austriacorum. – Viennae (J.T. de Trattnern), 214 pp. + v pls.
- LICHTENSTEIN, H. (1823): Verzeichniss der Doubletten des Zoologischen Museums der Königl. Universität zu Berlin, nebst beschreibung vieler bisher unbekannter Arten von Säugethieren, Vögeln, Amphibien und Fröschen. – Berlin (Trautwein), 118 pp.
- LINNAEUS, C. (1758): Systema Naturae per Regna Tria Naturae, Secundum Classes, Ordines, Genera, Species, cum Characteribus, Differentiis, Synonymis, Locis. Tomus I. 10<sup>th</sup> ed. – Stockholm (Laurentii Salvii), 824 pp.
- MAYER, W. & W. BÖHME (2000): Case 3085. *Lacerta undata* A. Smith, 1838 (currently *Pedioplanis undata*, Reptilia; Sauria): proposed conservation of the specific name by the designation of a neotype. – Bulletin of zoological Nomenclature, **57**: 100–102.
- MAYR, E. (1969): Principles of systematic zoology. – New York (MacGraw Hill Book Company), XI + 428 pp.
- MAYR, E. (1975): Systematische Zoologie. – Hamburg, Berlin (Verlag Paul Parey), 370 pp.
- MÉHELY, L. VON (1909): Materialien zu einer Systematik und Phylogenie der *muralis*-ähnlichen Lacerten. – Annales Musei Nationalis Hungarici, **7**: 409–621., pls. X–XXV.
- MERREM, B. (1819): *Agama*. pp. 162–168 in: ERSCH J. S. & J. G. GRUBER (eds): Allgemeine Encyclopädie der Wissenschaften und Künste in alphabetischer Folge von genannten Schriftstellern bearbeitet. Theil 2 Äga—Aldus. – Leipzig (J.F. Gleditsch). [Source for date of publication: BLÖMEKE, E. & MÜLLER, J. (1890) Katalog der Bibliothek des Reichstags. Reichstag, Berlin, 744 pp.]

- MERREM, B. (1820): Versuch eines Systems der Amphibien. Tentamen systematis amphibiorum. – Johann Christian Krieger, Marburg, xv + 191 pp., 1 pl.
- MERTENS, R. (1958): Bemerkungen über die Warane Australiens. – *Senckenbergiana biologica*, **39**: 229–264.
- MERTENS, R. (1960): Zur Systematik und Nomenklatur der Ceylon-Krokodile. – *Senckenbergiana biologica*, **41**: 267–272.
- MERTENS, R. (1962): *Dendraspis* Fitzinger, 1843 (Reptilia, Serpentes); proposed suppression under the Plenary Powers. – *Bulletin of Zoological Nomenclature*, **19**: 189–190.
- MERTENS, R. & H. WERMUTH (1960): Die Amphibien und Reptilien Europas (Dritte Liste, nach dem Stand vom 1. Januar 1960). – Frankfurt am Main (Gustav Kramer-Verlag), 265 pp.
- MICHENER, C. D. (1963): Some future developments in taxonomy. – *Systematic Zoology*, **12**: 151–172.
- MUTZ, T. & W. BÖHME (2022): *Ichthyosaura* as a generic nomen for the Alpine Newt (Caudata: Salamandridae): a doubtful case of literarian archeology. – *Salamandra*, **61**: 41–52.
- OHLER, A. & A. DUBOIS (2016): The identity of the South African toad *Sceloporphys capensis* Tschudi, 1838 (Amphibia, Anura). – *PeerJ*, **4**: e1553.
- O'SHEA, M. & H. KAISER (2018): Erroneous environs or aberrant activities? Reconciling unexpected collection localities for three New Guinean wormeating snakes (*Toxicocalamus*, Serpentes, Elapidae) using historical accounts. – *Herpetological Review*, **49**: 189–207.
- PHILIPP, K. M., W. BÖHME & T. ZIEGLER (1999): The identity of *Varanus indicus*: Redefinition and description of a sibling species coexisting at the type locality. (Sauria: Varanidae: *Varanus indicus* group). – *Spixiana*, **22**: 273–287.
- RAFFAELLI, J. (2007): Les Urodèles du monde. – Condé-sur-Noireau (Penclen Édition), 377 pp.
- RAFINESQUE-SCHMALTZ, C. S. (1810): Caratteri di alcuni nuovi generi e nuove species di animali I pianti della Sicilia, con varie osservazioni i sopra i medesimi. – Palermo (per die stampe di San Filippo), ii + 105 pp.
- RISCH, J.-P. (1984): Brève diagnose de *Paradactylodon*, genre nouveau d'urodèle de l'Iran (Amphibia, Caudata, Hynobidae). – *Alytes*, **3**: 44–46.
- RIVAS, J. A., P. DE LA QUINTANA, M. MANCUSO, L. F. PACHECO, G. A. RIVAS, S. MARIOTTO, D. SALAZAR-VALENZUELA, M. TEPEÑA BAIHUA, P. BAIHUA, G. M. BURGHARDT, F. J. VONK, E. HERNANDEZ, J. E. GARCÍA-PEREZ, B. G. FRY & S. COREY-RIVAS (2024): Disentangling the anacondas: revealing a new green species and rethinking yellows. – *Diversity*, **16**: 127.
- RÖSLER, H., L. L. GRISMER, I. INEICH & H. KAISER (2019): The purportedly Indo-Australian gecko species *Cnemaspis timoriensis* (Duméril & Bibron, 1836) is actually the first-named species of the Neotropical genus *Gonatodes* Fitzinger, 1843 (Squamata: Gekkonidae). – *Zootaxa*, **4576**: 483–509.
- SAVAGE, J. M. & C. GUYER (1991): Nomenclatural notes on Anoles (Sauria: Polychridae): stability over priority. – *Journal of Herpetology*, **25**: 365–366.
- SCHLEGEL, H. (1837): Essai sur la physionomie des serpens. Partie Générale + Partie Descriptive. – J. Kips, J. Hz. and W. P. van Stockum, La Haye, xxviii + 251 + 606 + xvi pp.
- SCHMIDTLER, J. F. (2009): *Ichthyosaura*, der neue Gattungsname für den Bergmolch – ein Lehrbeispiel in Sachen Nomenklatur. – *Zeitschrift für Feldherpetologie*, **16**: 245–250.
- SCHMIDTLER, J. F. (2019): Zur postglazialen Einwanderung heimischer Amphibien und Reptilien: Zoogeographische, ökologische und taxonomische Aspekte. pp. 40–50 in: ANDRÄ, E., O. ASSMANN, T. DÜRST, G. HANSBAUER & A. ZAHN (2019): Amphibien und Reptilien in Bayern. – Stuttgart (Verlag Eugen Ulmer), 783 pp.
- SCHMIDTLER, J. F. & W. BÖHME (2011): Synonymy and nomenclatural history of the Common or Viviparous Lizard, by this time: *Zootoca vivipara* (Lichtenstein, 1823). – *Bonn zoological Bulletin*, **60**: 214–228.
- SCHNEIDER, C. (2015): Sir Andrew Smith's "Illustrations of the Zoology of South Africa". – Berlin (Geitje Books), xxiii + 347 pp.
- SCHNEIDER, J. G. (1801): *Historiae Amphibiorum naturalis et literariae*. II. – Ienae (Fried. Frommani), vi + 374 pp.
- SCHWARZ, E. (1936): Untersuchungen über die Systematik und Verbreitung der europäischen und mediterranen Ottern. pp. 159–355 in: BIELING, R., A. DEMNITZ, O. SCHAUMANN, H. SCHLOSSBERGER, W. VON SCHUCKMANN & E. SCHWARZ (1936): Die Europäischen und Mediterranen Ottern und Ihre Gifte. – Marburg-Lahn (Behringwerk-Mitteilungen. Selbstverlag der Behringwerke).
- SEBA, A. (1734): *Locupletissimi rerum naturalium thesauri accurata descriptio, et iconibus artificiosissimis expressio, per universam physices historiam*. Opus, cui, in hoc rerum genere, nullum par exstitit. Ex toto terrarum orbe collegit, digessit, et depingendum curavit. Tomus I. – J. Wetstenium, & Gul. Smith, & Janssonio-Waesbergios, Amstelaedami [Amsterdam], xxxii + 178 pp., 111 pls.
- SHCHERBAK, N. N. (1975): *Jashchurki palearktiki*. – Kiev (Naukova dumka), 291 + 3 pp.
- SMITH, A. (1838–1849): *Illustrations of the Zoology of South Africa*. Reptilia. – London (Smith, Elder & Co.), 347 pp.
- SMITH, M. A. (1933): Remarks on some Old World geckos. – *Records of the Indian Museum*, **35**: 9–19.
- SPRACKLAND, R. H., H. H. SMITH & P. STRIMPLE (1997): Case 3042: *Hydrosaurus gouldii* Gray, 1838 (currently *Varanus gouldii*) and *Varanus panoptes* Storr, 1980 (Reptilia, Squamata): proposed conservation of the specific names by designation of a neotype for *H. gouldii*. – *Bulletin of Zoological Nomenclature*, **54**: 95–99.
- STÖCK, M., F. FAKHARZADEH, H. KUHLE, B. ROZENBLUT-KOSCISTY, S. LEINWEBER, R. PATEL, M. EBRAHIMI, S. VOITEL, J. F. SCHMIDTLER, H. G. KAMI, M. OGIELSKA & D. W. FÖRSTER (2019): Shedding light on a secretive Tertiary urodelean relict: Hynobiid salamanders (*Paradactylodon persicus* s. l.) from Iran, illuminated by phylogeographic, developmental, and transcriptomic data. – *Genes*, **10**: 306.
- STORR, G. M. (1980): The monitor lizards (genus *Varanus* Merrem, 1820) of Western Australia. – *Records of the West Australian Museum*, **8**: 273–293.
- THIESMEIER, B. & U. SCHULTE (2010): *Der Bergmolch*. – Bielefeld (Laurenti-Verlag), 159 pp.
- VENCES, M. (2015): Die Gattungszuordnung von Wechselkröte und Kreuzkröte und die Konsolidierung der wissenschaftlichen Benennung europäischer Amphibien. – *Zeitschrift für Feldherpetologie*, **22**: 11–24.
- WAGLER, J. (1830): *Natürliches System der Amphibien, mit vorangehender Classification der Säugthiere und Vögel*. Ein Beitrag zur vergleichenden Zoologie. – J. G. Cotta'sche Buchhandlung, München, Stuttgart und Tübingen.

- WEIJOLA, V. (2015): Case 3676. *Tupinambis indicus* Daudin, 1802 (currently *Varanus indicus*; Reptilia, Squamata): proposed conservation of usage of the specific name by replacement of the neotype. – Bulletin of zoological Nomenclature, **72**: 134–141.
- WEIJOLA, V. & F. KRAUS (2023): Two new species of monitor lizards (Squamata: *Varanus*) endemic to the Louisiade and Timor Archipelagos with a key to the subgenus *Euprepiosaurus*. – Journal of Natural History, **57**: 947–975.
- WEIJOLA, V. & S. S. SWEET (2015): A single species of mangrove monitor (*Varanus*) occupies Ambon, Seram, Buru and Saparua, Moluccas, Indonesia. – Amphibian and Reptile Conservation, **9**: 14–23.
- WEIJOLA, V., V. VAHTERA, A. KOCH, A. SCHMITZ & F. KRAUS (2020): Taxonomy of Micronesian monitors (Reptilia: Squamata: *Varanus*): endemic status of new species argues for caution in pursuing eradication plans. – Royal Society Open Science, **7**(5): 200092.
- WERMUTH, H. (1954): Zur Nomenklatur und Typologie des Leistenkrokodils, *Crocodylus porosus* Schneider, 1801. – Mitteilungen aus dem Zoologischen Museum in Berlin, **30**: 483–487.
- WERMUTH, H. (1960): The identity of the name *Crocodylus nantans* Meyer, 1795. A second contribution to the nomenclature and typology of the Estuarine Crocodile, *Crocodylus porosus* Schneider, 1801. – Spolia Zeylanica, **29**: 23–27.
- WERMUTH, H. (1965): Liste der rezenten Amphibien und Reptilien: Gekkonidae, Pygopodidae, Xantusiidae. – Das Tierreich, **80**: 1–245.
- WÜSTER, W., W. BÖHME, W. DENZER & H. KAISER (2025): Nomenclatural historians are kindly requested to respect the intent of the Code: Nomenclatural parsimony versus the case of the Nose-horned Viper, *Vipera ammodytes* (Linnaeus, 1758). – Zootaxa, **5696**(3): 385–397.
- WÜSTER, W., H. KAISER, M. S. HOOGMOED, L. M. P. CERÍACO, L. DIRKSEN, C. DUFRESNES, F. GLAW, A. HILLE, J. KÖHLER, T. KOPPETSCH, K. D. MILTO, G. M. SHEA, D. TARKNISHVILI, S. A. THOMSON, M. VENCES & W. BÖHME (2024): How not to describe a species: lessons from a tangle of anacondas (Boidae: *Eunectes* Wagler, 1830). – Zoological Journal of the Linnean Society, **201**: zlae099.
- WÜSTER, W., S. A. THOMSON, M. O'SHEA & H. KAISER (2021): Confronting taxonomic vandalism in biology: conscientious community self-organization can preserve nomenclatural stability. – Biological Journal of the Linnean Society, **133**: 645–670.
- ZIEGLER, T., A. SCHMITZ, A. KOCH & W. BÖHME (2007): A review of the subgenus *Euprepiosaurus* (Squamata: Varanidae): morphological and molecular phylogeny, distribution and zoogeography, with an identification key for the members of the *V. indicus* and the *V. prasinus* groups. – Zootaxa, **1472**: 1–28.