Australasian Journal of Herpetology 74:28-52. Published 25 March 2025.



Historical reality ... Europeans invade each other ... Tweaking the lizard genus *Podarcis* Wagler, 1830 *sensu lato* with five new genera, a subgenus and five new species from Iberia and north-west Africa.

LSIDURN:LSID:ZOOBANK.ORG:PUB:6DB6E47D-A752-44DF-8604-51E026644E7A

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ABSTRACT

So called "Wall Lizards" within the genus *Podarcis* Wagler, 1830 *sensu lato* are familiar to most European herpetologists.

They have been studied extensively for hundreds of years.

Lineages are also known to have crossed from Europe to Africa and vice-versa across the Mediterranean. In spite of two centuries of intensive taxonomic studies and severe "over-splitting" by herpetologists, there remain unnamed groups and forms in this group.

Without revisiting the taxonomy and nomenclature of the entire group and rehashing what is already known and not in contention, this paper takes the obvious step of naming some remaining well-known and obviously unnamed forms.

The genus *Podarcis* Wagler, 1830 *sensu lato* is also divided into various genera and subgenera. Recognised herein are *Podarcis* Wagler, 1830 (type species: *Seps muralis* Laurenti, 1768) and *Phenax* Fitzinger, 1843 (type species: *Lacerta taurica* Pallas, 1814), being resurrected from synonymy as an available name.

Five new genera, all at least 10 MYA divergent from nearest relatives (as identified by Yang *et al.* 2021) are formally named for the first time in accordance with the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) as amended ICZN (2012), as well as one newly named subgenus being about 10 MYA divergent from nearest relatives.

In addition, two taxa from Spain and three from northwest Africa all well known as being distinct species, but not yet formally named are herein named as new species.

They have generally been treated by herpetologists as variants of either "*Podarcis hispanicus* (Steindachner, 1870)" or "*Podarcis vaucheri* (Boulenger, 1905)", although most recent authors have treated all as being of the latter.

Each form named herein is believed to be at least 1.5 MYA divergent from nearest relative.

Keywords: Lizards; taxonomy; nomenclature; Europe; Africa; Spain; Algeria; Tunisia; *Podarcis*; *Phenax; hispanicus; vaucheri*; new genus; *Hosersaureea; Thierryfreteyius; Wellslacerta; Hellassaurus; Wellingtonlacerta*; new subgenus; *Sardiniacorsicaensis*; new species; *thierryfreteyi; alainduboisi; karimdaouesi; kheloufii; mohamedmissoumi.*

INTRODUCTION

Lizards within the genus *Podarcis* Wagler, 1830 *sensu lato* are familiar to most European herpetologists.

They are known to most people as "Wall Lizards"

They have been studied extensively for hundreds of years. Lineages are known to have crossed from Europe to Africa and vice-versa across the Mediterranean, which forms the centre of distribution for the group.

In spite of two centuries of intensive taxonomic studies and severe "over-splitting" by herpetologists at the species and subspecies level, there remain unnamed groups and forms in this group.

Without revisiting the taxonomy and nomenclature of the

entire group and rehashing what is already known and not in contention, this paper takes the obvious step of naming some remaining well-known and obviously unnamed forms.

The genus *Podarcis* Wagler, 1830 *sensu lato*, currently comprising roughly 30 recognised species and numerous subspecies (quite a number of which should be elevated to full species) is also divided into seven genera and one additional subgenus.

These newly named groups are split based on morphological and genetic divergence.

Recognised herein are *Podarcis* Wagler, 1830 (type species: *Seps muralis* Laurenti, 1768) and the largely unused genus name *Phenax* Fitzinger, 1843 (type species: *Lacerta taurica* Pallas, 1814), being resurrected from synonymy as an available name.

Five new genera, all at least 10 MYA divergent from nearest relatives (as identified in the paper by Yang *et al.* 2021) are formally named for the first time in accordance with the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) as amended ICZN (2012), as well as one newly named subgenus.

Herein, I note that Keroglidou *et al.* (2024) find divergences in the order of two thirds that estimated by Wang *et al.* (2021) but these results still make genus or subgenus level recognition of each relevant group a favourable classification/nomenclatural option.

In addition, two taxa from Spain and three from northwest Africa all well known as being distinct species, but not yet formally named are herein named as new species.

Rather than these unnamed forms being in "limbo" indefinitely, they are formally named based on identified morphological differences and a divergence of at least 1.5 MYA from nearest relatives.

MATERIALS AND METHODS

Available specimens of all relevant species and groups as identified in the abstract and introduction within the putative genus *Podarcis* Wagler, 1830 *sensu lato* were inspected as were quality photographs available online.

They were checked for morphological divergences and/or obvious biogeographical barriers separating the populations, including those flagged in papers such as those listed above and below.

Specimens inspected included dead and live specimens as well as images with good locality data.

Molecular studies involving species within the putative genus *Podarcis* Wagler, 1830 *sensu lato*

and other similarly distributed reptiles and frogs from across the Mediterranean basin were also reviewed to flag likely speciation points for wider-ranging putative taxa.

This included those more archaic speciation events and divergences, worthy of genus-level recognition.

Published references and taxonomic treatments relevant to Podarcis Wagler, 1830 sensu lato and the identified component species and those relevant to the taxonomic and nomenclatural conclusions in this paper included Arnold (1973), Arnold et al. (2007), Arntzen and Sá-Sousa (2007), Bannert (1998), Barata et al. (2012, 2015), Bassitta et al. (2020), Bea et al. (1986), Bedriaga (1879a-b), Berroneau (2010), Bibron and Bory de Saint-Vincent (1833), Bolkay (1919), Boscá (1883, 1916), Boulenger (1887, 1889, 1891, 1905a-b, 1918, 1920), Braun (1877, 1886), Buchholz (1960), Busack and Lawson (2008), Capula (1994), Carretero (2008), Castiglia et al. (2021), Castilla et al. (1998), Clover (1979), Escoriza (2017), Fitzinger (1826a, 1826b, 1843), Georgi (1801), Geniez and Crochet (2023), Geniez et al. (2007, 2008, 2014), Gistel (1868), Gmelin (1989), Grossmann (2019), Guerro-Casado et al. (2022), Guillaume and Geniez (1986), Guilherme et al. (2018), Günther (1874), Harris and Sá-Sousa (2001), Harris et al. (2002), Hoser (2015g), ICZN (2012), Kaliontzopoulou et al. (2011, 2012), Keroglidou

et al. (2024), Klemmer (1959, 1964), Kwet (2010), Kwet and Trapp (2014), Laurenti (1768), Lehrs (1902), Lymberakis *et al.* (2008), Mediani *et al.* (2015), Mertens (1952, 1955), Mertens and Müller (1940), Oefinger (2017), Oliverio *et al.* (2000), Oskyrko *et al.* (2022), Pallas (1814), Pérez-Mellado (1981a-b, 1986), Poulakakis *et al.* (2003, 2005a-b), Psonis *et al.* (2016, 2021), Rafinesque Schmaltz (1810), Rato *et al.* (2021), Renoult *et al.* (2010a, 2010b), Ride *et al.* (1999), Rivera *et al.* (2009), Rouag *et al.* (2024), Santos *et al.* (2024), Schlüter (2003, 2012), Sindaco and Jeremcenko (2008), Steindachner (1870), Valakos *et al.* (2007), Veríssimo and Carretero (2009), Wagler (1830), Werner (1830), Yang *et al.* (2020, 2021, 2022) and sources cited therein. **RESULTS**

These have been summed up already in both abstract and introduction.

The review found seven obvious genus-level groupings within *Podarcis* Wagler, 1830 *sensu lato.*

Besides *Podarcis* with *Seps muralis* Laurenti, 1768) as its type species and the largely unused genus name *Phenax* Fitzinger, 1843 (type species: *Lacerta taurica* Pallas, 1814), being resurrected from synonymy as an available name, there were no other available genus-level names.

Podarcis and *Phenax* identify two obvious groups and are used for each.

Five new genera, all at least 10 MYA divergent from nearest relatives (as identified in the paper by Yang *et al.* 2021) are formally named for the first time in accordance with the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) as amended ICZN (2012), as well as one newly named subgenus.

These are as follows:

1/ Hosersaureea gen. nov., type species Zootoca lilfordi Günther, 1874. As a cohort of species, all diverged more than 16 MYA from their nearest named relatives. This includes all those species within what is left of *Podarcis* Wagler, 1830 *sensu lato*.

Within this genus, is a subgenus *Sardiniacorsicaensis gen. nov.* with type species *Lacerta tiliguerta* Gmelin in Linnaeus, 1789. As a cohort of species, all diverged about 10 MYA from their nearest named relatives. This includes all those species within what is left of *Podarcis* Wagler, 1830 *sensu lato*.

2/ Thierryfreteyius gen. nov., type species Thierryfreteyius thierryfreteyi sp. nov. is a group generally encompassing species with a centre of distribution on the Iberian Peninsula and regions to the immediate south and north-east.

As a cohort of species, all diverged more than 10 MYA from their nearest named relatives. This includes all those species within what is left of *Podarcis* Wagler, 1830 *sensu lato.*

3/ Wellslacerta gen. nov., type species Lacerta sicula Rafinesque-Schmaltz, 1810, with a distribution centred on Italy and countries to the east of the there.

As a cohort of species, all diverged more than 16 MYA from their nearest named relatives. This includes all those species within what is left of *Podarcis* Wagler, 1830 *sensu lato*.

4/ *Hellassaurus gen. nov.*, type species *Lacerta peloponnesiaca* Bibron and Bory de Saint-Vincent, 1833 with a centre of distribution including the Greek islands and areas immediately north.

As a cohort of species, all diverged more than 10 MYA from their nearest named relatives. This includes all those species within what is left of *Podarcis* Wagler, 1830 *sensu lato*.

5/ Wellingtonlacerta gen. nov. type species Podarcis waglerianus Gistel, 1868, with a centre of distribution including south Italian islands and Malta.

As a cohort of species, all diverged more than 13 MYA from their nearest named relatives. This includes all those species within what is left of *Podarcis* Wagler, 1830 *sensu lato*.

In terms of the preceding genus and subgenus groups, I note that Keroglidou *et al.* (2024) found divergences in the order

of two thirds that estimated by Wang *et al.* 2021), but these divergences are still in effect making genus or subgenus level recognition of each relevant group a favourable classification and nomenclatural option.

New species named in this paper are all forms that have until now been treated as variants of *T. vaucheri* (Boulenger, 1905).

These include two divergent lineages from southern Spain, two from north Algeria and a third from Tunisia and immediately adjacent far north-east Algeria.

All are believed to have diverged from closest common ancestors at least 1.5 MYA.

The five newly named species taxa are:

Thierryfreteyius thierryfreteyi sp. nov. from the south of the Iberian Peninsula, with a centre of distribution being Andalucia, Spain and pretty much of the same area.

Thierryfreteyius alainduboisi sp. nov. from the immediate vicinity of the hilly areas in and around Alcala la Real, Jaen Province, Spain. It is a divergent and yet range-restricted taxon.

Thierryfreteyius karimdaouesi sp. nov. from north-west Tunisia and immediately adjacent north-east Algeria.

Thierryfreteyius kheloufii sp. nov. known only from the immediate vicinity of Batna, north-east Algeria.

Thierryfreteyius mohamedmissoumi sp. nov. known only from the immediate vicinity of Azazgah, Algeria.

I also note that the three (mainly) east Algerian species (the last three above) as a cohort are all very divergent from all others in the *T. vaucheri* complex, which in effect form a sister group, more than 2 MYA divergent based on the phylogenies published to date.

Each appears to be about 1.5 MYA or more divergent from one another and can be easily separated from one another morphologically.

INFORMATION RELEVANT TO THE FORMAL DESCRIPTIONS THAT FOLLOW

There is no conflict of interest in terms of this paper, or the conclusions arrived at herein.

Several people including anonymous peer reviewers who revised the manuscript prior to publication are also thanked as are relevant staff at museums who made specimens and records available in line with international obligations.

In terms of the following formal descriptions, spelling of names should not be altered in any way for any purpose unless expressly and exclusively called for by the rules governing Zoological Nomenclature as administered by the International Commission of Zoological Nomenclature (Ride *et al.* 1999 and ICZN 2012).

Material downloaded from the internet and cited anywhere in this paper was downloaded and checked most recently as of 13 March 2025, unless otherwise stated and were accurate in terms of the context cited herein as of that date.

Unless otherwise stated explicitly, colour descriptions apply to living adult male specimens of generally good health and not under any form of stress by means such as excessive cool, heat, dehydration, excessive aging or abnormal skin reaction to chemical or other input.

Note that there is ordinarily some sexual dimorphism between adults of species within the relevant genus.

References to tails are of original ones unless otherwise stated.

While numerous texts and references were consulted prior to publication of this paper, the criteria used to separate the relevant species has already been spelt out and/or is done so within each formal description and does not rely on material within publications not explicitly cited herein.

In the unlikely event any "first reviser" seeks to merge two or more newly named taxa into one, then the name to be retained is that which is first by page priority as listed in the abstract keywords. Some material within descriptions is repeated to ensure each fully complies with the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) and the 2012 amendments (ICZN 2012).

The people who assisted with provision of photos and other materials used within this paper are also thanked for their valuable assistances, for which they sought nothing in return. The "version of record" is the printed version and not pdf version. Both are identical in all materially relevant ways except for the fact that the images in the printed version may be in black and white, as opposed to colour as seen in the pdf version.

CONSERVATION

The relevant comments in Hoser (1989, 1991, 1993, 1998, 2007, 2009, 2012a-b, 2013, 2015a-f, 2019a-b, 2020a-b, 2021a-b, 2023, 2024a-b, 2025) and sources cited therein apply to the genera and species formally named within this paper in addition to other members of *Podarcis* Wagler, 1830 *sensu lato* as defined by previous cited authors.

Species within the relevant group (*Podarcis* Wagler, 1830 *sensu lato*) compete directly with one another and with human mediated dispersals, some species are in decline and even extinct, in the face of advances and invasions by other European or north African species.

Each relevant species therefore needs to be properly monitored and conserved by government, NGO's and concerned individuals working collaboratively and not combatively.

PODARCIS WAGLER, 1830

Type species: Seps muralis Laurenti, 1768.

Diagnosis: Species within the genus *Podarcis* Wagler, 1830, *sensu stricto* as defined herein are separated from all other species formerly placed within *Podarcis sensu lato* and all other Lacertini by the following unique combination of characters:

This is the only Lacertini genus to have the oviducts inserting into the genital sinus near the tips of the lobes.

This genus also has the following unique features, which in combination separate it from all other Lacertini: maxillary-jugal suture often stepped; usual numbers of presacral vertebrae is 26-27 in males; sternal fontanelle quite strongly heart-shaped in most cases; pattern of tail vertebrae C-type; nearly always a single postnasal scale; outer edge of parietal scale reaching lateral border of parietal table both posteriorly and anteriorly; dorsal scales, if distinctly hexagonal and keeled are never larger than the laterals; 6 (rarely 8) ventral plates in a longitudinal series with a rectilinear or nearly rectilinear border; sexual dimorphism in dorsal colouring usually stark, with narrow light stripes often present in females; 12 to 31 femoral pores; toes are more-or-less compressed with 19-36 lamellae under the fourth toe; hemipenal lobes long with large outer sulcal lips.

Other features, seen in this genus and others that are closely related include: head and body not strongly depressed; usually seven premaxillary teeth in adults; inscriptional ribs often present; tail occasionally brightly coloured in hatchlings, hemipenal micro-ornamentation of hook-shaped spines; ventral plates smooth; collar strongly marked; digits not serrated laterally; subdigital lamellae smooth or tubercular; nostril pierced between two or free nasals and the first upper labial or separated from the latter by a narrow rim; dorsal scales small or moderate, juxtaposed or subimbricate (modified from Arnold *et al.* 2007 and Boulenger, 1920).

Distribution: Turkey/Ukraine in the east and west Spain in the West, including most of Europe, except for the plains in the north as well as not including most nearby major Mediterranean islands.

Content: *Podarcis muralis* (Laurenti, 1768) (type species). The species *Podarcis muralis* (Laurenti, 1768) as treated herein is a complex of about 7 closely related species for which there are available names. See for example divergences of lineages more than 1.5 MYA cited in Keroglidou *et al.* (2024) and sources.

PHENAX FITZINGER, 1843

Type species: Lacerta taurica Pallas, 1814.

Diagnosis: Species within the genus *Phenax* Fitzinger, 1843 as defined herein are separated from all other species formerly placed within *Podarcis sensu lato* and all other Lacertini by the following unique combination of characters:

Ventral plates smooth; collar strongly marked; digits not serrated laterally; subdigital lamellae smooth or tubercular; nostril pierced between two or free nasals and the first upper labial or separated from the latter by a narrow rim; dorsal scales small or moderate, juxtaposed or subimbricate. Transverse series of ventral plates with rectilinear or nearly rectilinear border, in longitudinal series 6 or 8 in number; 12 to 31 femoral pores; toes more or less compressed, with 19 to 29 fourth digit lamellae; normally a single postnasal; pterygoid teeth constantly or nearly constantly present; an incomplete series of granules between the supraoculars and the superciliaries (rarely reduced to 2 to 5); frontal tricuspid at the front, the three processes extend far forward between the head shields in front of it; collar serrated; dorsal scales usually diagonally keeled; caudal scales more or less pointed behind; never more than 80 mm snout vent length or 240 mm total length.

Lizards in the closely associated genus *Hellassaurus gen. nov.* are readily separated from those in the genus *Phenax* (as defined above) by having a smooth-edged collar (instead of serrated). *Hellassaurus gen. nov.* are also larger in size, attaining over 85 mm snout vent and 250 mm total length (versus never more than 80 mm snout vent and 240 mm total).

Both genera also have a high head, broad neck and relatively long extremities. Supraciliary granules may be in a closed or interrupted row.

Otherwise, both *Hellassaurus gen. nov.* and *Phenax* are morphologically similar.

As defined herein the cohort of species within *Phenax* all diverged more than 10 MYA from their nearest named relatives, based on the phylogeny published by Yang *et al.* (2021) at Fig. 2, those being the species within the genus *Hellassaurus gen. nov.*. As a pair, these two genera diverged from their next nearest

relatives in *Wellingtonlacerta gen. nov.* over 13 MYA, based on the phylogeny published by Yang *et al.* (2021) at Fig. 2.

In turn these three genera diverged from their next nearest relatives in *Hosersaureea gen. nov.* more than 15 MYA based on the phylogeny published by Yang *et al.* (2021) at Fig. 2.

Distribution: Mainly Greece and immediately north, but

essentially confined to east Europe, well south of the main north European plain.

Content: Phenax taurica (Georgi, 1801) (type species); P.

gaigeae (Werner, 1930); *P. ionicus* (Lehrs, 1902); *P. melisellensis* (Braun, 1877); *P. milensis* (Bedraiga, 1882).

HOSERSAUREEA GEN. NOV.

LSIDurn:lsid:zoobank.org:act:48DEF514-24A8-41B7-9936-2A9C4A97FD9F

Type species: Zootoca lilfordi Günther, 1874.

Diagnosis: Species within Hosersaureea gen. nov. of the

nominate subgenus are separated from all other species within *Podarcis* Wagler, 1830 *sensu lato* by the following unique combination of characters:

Ventral plates smooth; collar strongly marked; digits not serrated laterally; subdigital lamellae smooth or tubercular; nostril pierced between two or free nasals and the first upper labial or separated from the latter by a narrow rim; dorsal scales small or moderate, juxtaposed or subimbricate.

Rostral usually narrowly separated from the nostril or sometimes just entering it and rarely well entering it; frontal as long as or shorter than its distance from the end of the snout; series of granules between the supraoculars and the supraciliaries complete or incomplete, the first superciliary often in contact with the second supraocular; suture between the first and second superciliaries usually oblique, sometimes vertical; parietal is 1.0 to 1.4 times as long as broad, in contact with the upper postocular; occipital very variable in size, usually longer and broader than the interparietal, but sometimes slightly shorter; rarely 2 post nasals.

Subocular narrower beneath than above; upper temporal shields entirely absent or broken up into a series of small shields; temple covered with granular scales; masseteric shield is usually distinct.

30 to 41 scales on a line between the symphysis of the chinshields and the median collar-plate; gular fold distinct. Collar even edged, usually formed of small or very small plates, being 9 to 15 in number.

Scales granular, round, roundish-hexagonal or oval, smooth or sometimes with faint keels; 55 to 90 mid-body rows the body; 35 to 62 transverse series, in the middle of the back, correspond to the length of the head, 3, 4 and 5 (rarely 5) on the side correspond to a ventral plate.

Ventral plates in 25 to 30 transverse series in males, 27 to 31 in females.

Preanal plate moderate or rather large, sometimes small, bordered by one or two series of small

plates. Scales on upper surface of tibia finely granular, smooth, smaller than the dorsals.

17 to 25 femoral pores (usually 19 to 24); 22 to 32 lamellae under the fourth toe; foot 1 to 1.4 times as long as the head; tail 1.4 to 2 times the length of head and body, often of equal thickness in its anterior third; markings on the tail never forming crossbars; 50-80 mm snout-vent length.

Upper caudal scales not, or slightly, oblique, more or less strongly keeled, truncate or very obtusely pointed behind; the whorls subequal in length, the fourth behind the postanal granules containing 30 to 46 scales.

Head 1.21 to 1.6 times as long as broad, moderately depressed, its depth equalling the distance between the anterior corner or the centre of the eye and the tympanum; snout usually decidedly pointed; cheeks swollen in males. Neck as broad as or broader than the head.

Body moderately depressed. Hind limb reaching the shoulder, the collar, or a little beyond the latter in males, reaching the axil or the shoulder in females.

The colour of the back varies from yellow, brown to olive, bright grass-green, or blue green; the sides are brown or reddish brown with paler brown or pale green spots and the lizard is commonly generally darker dorsally than most other species within *Podarcis* Wagler, 1830 *sensu lato*.

Three stripes of dark brown or blackish spots or vermiculations extend along the back, but it frequently happens that these stripes lighten in the centre and that their borders become converted into lines, such specimens having six fine dark lines along the back; other specimens may have dark marblings or vermiculations all over the back, and such is the case in some young specimens where the upper surface of the head and tail have small blackish spots.

The lower parts vary from orange to salmon-red, coppercolour, or brick-red, with small black spots which may form a regular longitudinal series; a series of turquoise-blue spots are commonly, but not always on each side of the belly; throat spotted or marbled with reddish brown or blackish pigment.

Females often have a light dorsolateral streak, beginning from the superciliary edge, sometimes bordered by fine black lines, sometimes with a black vertebral streak.

Upper surface of head in both sexes is spotted or vermiculated with black; tail has dark and light markings, forming more or less regular longitudinal series.

Young have 6 light streaks on the body. Belly is yellow, orange, or red, without markings, except on the outer row of ventral plates, which bear large blue spots and also occasionally small

black ones.

Adult *H. lilfordi* (Günther, 1874) are as adults a uniform deep shiny black or dark brown above and of a beautiful sapphire-blue beneath. Some may have pale bluish green or turquoise-blue spots on the sides of the lapis-blue belly, which has small black spots.

Young *H. lilfordi* are brown above, with dark spots and lines, dark brown or black on the sides, with numerous blue spots, tail dark green; the belly is greenish in the middle, black spotted with blue on the sides.

Species within *Hosersaureea gen. nov.* of the subgenus *Sardiniacorsicaensis subgen. nov.* are separated from all other species within *Podarcis* Wagler, 1830 *sensu lato* by the following unique combination of characters:

As for the nominate subgenus *Hosersaureea gen. nov.* just summarised, but with the following differences:

Head is strongly depressed (versus moderately depressed), the occiput quite flat or even slightly concave; anterior upper temporal shield often in contact with fourth supraocular; belly usually without small black spots on the sides (versus with).

As defined herein the cohort of species, *Hosersaureea gen. nov.* all diverged more than 10 MYA from their nearest named relatives based on the phylogeny published by Yang *et al.* (2021) at Fig. 2, those being the species within the genus *Hellassaurus gen. nov.*.

As a pair, these two genera diverged from their next nearest relatives in *Wellingtonlacerta gen. nov.* over 13 MYA, based on the phylogeny published by Yang *et al.* (2021) at Fig. 2.

Hosersaureea gen. nov. diverged from their next nearest relatives more than 15 MYA based on the phylogeny published by Yang *et al.* (2021) at Fig. 2.

Those genera were (as identified herein), *Wellingtonlacerta gen. nov.*, *Hellassaurus gen. nov.* and *Phenax* Fitzinger, 1843.

Distribution: North-west Mediterranean islands between Italy and Spain.

Etymology: *Hosersaureea gen. nov.* is named in honour of my mother, Katrina Hoser, of Lane Cove, New South Wales, Australia in recognition of her services to herpetology spanning nearly 60 years. The spelling is deliberate and created to avoid creation of any homonyms with similar names, so should not be altered or amended.

Content: Hosersaureea (Hosersaureea) lilfordi (Günther, 1874) (type species); H. (Sardiniacorsicaensis) contii (Lanza and Brizzi, 1977); H. (Hosersaureea) pityusensis (Bosca, 1883); H. (Sardiniacorsicaensis) tiliguerta (Gmelin in Linnaeus, 1789).

SARDINIACORSICAENSIS SUBGEN. NOV.

LSIDurn:lsid:zoobank.org:act:AE8B7AD5-735C-49C3-9273-FABB49BA0E28

Type species: Lacerta tiliguerta Gmelin in Linnaeus, 1789.

Diagnosis: Species within *Hosersaureea gen. nov.* of the nominate subgenus are separated from all other species within *Podarcis* Wagler, 1830 *sensu lato* by the following unique combination of characters:

Ventral plates smooth; collar strongly marked; digits not serrated laterally; subdigital lamellae smooth or tubercular; nostril pierced between two or free nasals and the first upper labial or separated from the latter by a narrow rim; dorsal scales small or moderate, juxtaposed or subimbricate.

Rostral usually narrowly separated from the nostril or sometimes just entering it and rarely well entering it; frontal as long as or shorter than its distance from the end of the snout; series of granules between the supraoculars and the supraciliaries complete or incomplete, the first superciliary often in contact with the second supraocular; suture between the first and second superciliaries usually oblique, sometimes vertical; parietal is 1.0 to 1.4 times as long as broad, in contact with the upper postocular; occipital very variable in size, usually longer and broader than the interparietal, but sometimes slightly shorter; rarely 2 post nasals.

Subocular narrower beneath than above; upper temporal shields entirely absent or broken up into a series of small shields; temple covered with granular scales; masseteric shield is usually distinct.

30 to 41 scales on a line between the symphysis of the chinshields and the median collar-plate; gular fold distinct. Collar even edged, usually formed of small or very small plates, being 9 to 15 in number.

Scales granular, round, roundish-hexagonal or oval, smooth or sometimes with faint keels; 55 to 90 mid-body rows the body; 35 to 62 transverse series, in the middle of the back, correspond to the length of the head, 3, 4 and 5 (rarely 5) on the side correspond to a ventral plate.

Ventral plates in 25 to 30 transverse series in males, 27 to 31 in females.

Preanal plate moderate or rather large, sometimes small, bordered by one or two series of small

plates. Scales on upper surface of tibia finely granular, smooth, smaller than the dorsals.

17 to 25 femoral pores (usually 19 to 24); 22 to 32 lamellae under the fourth toe; foot 1 to 1.4 times as long as the head; tail 1.4 to 2 times the length of head and body, often of equal thickness in its anterior third; markings on the tail never forming crossbars; 50-80 mm snout-vent length.

Upper caudal scales not, or slightly, oblique, more or less strongly keeled, truncate or very obtusely pointed behind; the whorls subequal in length, the fourth behind the postanal granules containing 30 to 46 scales.

Head 1.21 to 1.6 times as long as broad, moderately depressed, its depth equalling the distance between the anterior corner or the centre of the eye and the tympanum; snout usually decidedly pointed; cheeks swollen in males. Neck as broad as or broader than the head.

Body moderately depressed. Hind limb reaching the shoulder, the collar, or a little beyond the latter in males, reaching the axil or the shoulder in females.

The colour of the back varies from yellow, brown to olive, bright grass-green, or blue green; the sides are brown or reddish brown with paler brown or pale green spots and the lizard is commonly generally darker dorsally than most other species within *Podarcis* Wagler, 1830 *sensu lato.*

Three stripes of dark brown or blackish spots or vermiculations extend along the back, but it frequently happens that these stripes lighten in the centre and that their borders become converted into lines, such specimens having six fine dark lines along the back; other specimens may have dark marblings or vermiculations all over the back, and such is the case in some young specimens where the upper surface of the head and tail have small blackish spots.

The lower parts vary from orange to salmon-red, coppercolour, or brick-red, with small black spots which may form a regular longitudinal series; a series of turquoise-blue spots are commonly, but not always on each side of the belly; throat spotted or marbled with reddish brown or blackish pigment.

Females often have a light dorsolateral streak, beginning from the superciliary edge, sometimes bordered by fine black lines, sometimes with a black vertebral streak.

Upper surface of head in both sexes is spotted or vermiculated with black; tail has dark and light markings, forming more or less regular longitudinal series.

Young have 6 light streaks on the body. Belly is yellow, orange, or red, without markings, except on the outer row of ventral plates, which bear large blue spots and also occasionally small black ones.

Adult *H. lilfordi* (Günther, 1874) are as adults a uniform deep shiny black or dark brown above and of a beautiful sapphire-blue beneath. Some may have pale bluish green or turquoise-blue

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spots on the sides of the lapis-blue belly, which has small black spots.

Young *H. lilfordi* are brown above, with dark spots and lines, dark brown or black on the sides, with numerous blue spots, tail dark green; the belly is greenish in the middle, black spotted with blue on the sides.

Species within *Hosersaureea gen. nov.* of the subgenus *Sardiniacorsicaensis subgen. nov.* are separated from all other species within *Podarcis* Wagler, 1830 *sensu lato* by the following unique combination of characters:

As for the nominate subgenus *Hosersaureea gen. nov.* just summarised, but with the following differences:

Head is strongly depressed (versus moderately depressed), the occiput quite flat or even slightly concave; anterior upper temporal shield often in contact with fourth supraocular; belly usually without small black spots on the sides (versus with).

As defined herein the cohort of species, *Hosersaureea gen. nov.* all diverged more than 10 MYA from their nearest named relatives based on the phylogeny published by Yang *et al.* (2021) at Fig. 2, those being the species within the genus *Hellassaurus gen. nov.*.

As a pair, these two genera diverged from their next nearest relatives in *Wellingtonlacerta gen. nov.* over 13 MYA, based on the phylogeny published by Yang *et al.* (2021) at Fig. 2.

Hosersaureea gen. nov. diverged from their next nearest relatives more than 15 MYA based on the phylogeny published by Yang *et al.* (2021) at Fig. 2.

Those genera were (as identified herein), *Wellingtonlacerta gen. nov., Hellassaurus gen. nov.* and *Phenax* Fitzinger, 1843.

Distribution: The subgenus occurs on the islands of Sardinia and Corsica in the middle Mediterranean.

Etymology: The subgenus name *Sardiniacorsicaensis subgen. nov.* is derived from the locations the species in the subgenus occurs, namely the islands of Sardinia and Corsica in the middle Mediterranean.

Content: Hosersaureea (Sardiniacorsicaensis) tiliguerta (Gmelin in Linnaeus, 1789) (type species); *H.* (Sardiniacorsicaensis) contii (Lanza and Brizzi, 1977).

THIERRYFRETEYIUS GEN. NOV.

LSIDurn:lsid:zoobank.org:act:22B92680-649C-4DBD-8B31-748848143B75

Type species: *Thierryfreteyius thierryfreteyi sp. nov.*

Diagnosis: Species within Thierryfreteyius gen. nov. are separated from all other species within Podarcis Wagler, 1830 sensu lato by the following unique combination of characters: Dorsal scales smooth to moderately keeled, 51 to 76 midbody rows; ventral plates smooth; upper caudal scales smooth or feebly keeled; collar strongly marked; digits not serrated laterally; subdigital lamellae smooth or tubercular; 21 to 29 subdigital lamellae under the fourth toe; nostril pierced between two or free nasals and the first upper labial or separated from the latter by a narrow rim; dorsal scales small or moderate, juxtaposed or subimbricate; collar-plates very small; 13 to 22 femoral pores; masseteric shield usually very small or absent. Very flattened head, sharply pointed snout, and either a conspicuously striated body colour pattern or such pattern absent but whatever pattern is present, it is not vivid green or with vivid green as part of the pattern

Adult snout-vent length is 50-65 mm.

The species in the genus *Thierryfreteyius gen. nov.* diverged from nominate *Podarcis* Wagler, 1830, with a type species of *Seps muralis* Laurenti, 1768, more than 10 MYA based on the published phylogeny of Yang *et al.* (2021).

Distribution: *Thierryfreteyius gen. nov.* species primarily occupy lberia in south-west Europe and outlier populations in nearby parts of south-west Europe (France) and nearby North-west Africa (Morocco, Algeria, Tunisia).

Etymology: *Thierryfreteyius gen. nov.* is named in honour of Thierry Frétey of Association RACINE, 5 allée des Cygnes, 35750 Saint-Maugan, France in recognition of his standing up to pressure and harassment from members of the Adam Britton / Wolfgang Wuster gang of thieves and sexual perverts who were trying to unlawfully induce Thierry Frétey to engage in ICZN Code destroying acts of taxonomic vandalism and other serious acts of misconduct (see for example in Hoser 2019a, 2019b).

Content: Thierryfreteyius thierryfreteyi sp. nov. (type

species); *T. alainduboisi sp. nov.*; *T. atratus* (Bosca, 1916); *T. bocagei* (Lopez-Seoane, 1885); *T. carbonelli* (Perez-Mellado, 1981); *T. guadarramae* (Bosca, 1916); *T. hispanicus* (Steindachner, 1870); *T. karimdaouesi sp. nov.*; *T. kheloufii sp. nov.*; *T. liolepis* (Boulenger, 1905); *T. lusitanicus* (Geniez, Sa-Souza, Guillaume, Cluchier and Crochet, 2014); *T. mohamedmissoumi sp. nov.*; *T. vaucheri* (Boulenger, 1905); *T. virescens* (Geniez, Sa-Souza, Guillaume, Cluchier and Crochet, 2014).

WELLSLACERTA GEN. NOV.

LSIDurn:lsid:zoobank.org:act:53D8FE6F-F437-47DD-A289-592F43570D26

Type species: *Lacerta sicula* Rafinesque-Schmaltz, 1810. **Diagnosis:** Species within *Wells/acerta gen. nov.* are separated from all other species within *Podarcis* Wagler, 1830 *sensu lato* and all other Lacertidae by the following unique combination of characters:

Ventral plates smooth; collar strongly marked; collar with an even or feebly serrated edge, composed of 8-12 plates; digits not serrated laterally; subdigital lamellae smooth or tubercular; nostril pierced between two or free nasals and the first upper labial or separated from the latter by a narrow rim; dorsal scales small or moderate, juxtaposed or subimbricate.

There are 5 or 4 transverse series of scales on the side that correspond to a ventral plate, 36 (males) to 51 (females) rows of scales in the middle of the back, to the length of the head. Ventral plates in 6 longitudinal and 25 to 30 transverse series being 25 to 28 in males, 28 to 30 in females; the plates of the second series from the median line are the broadest. Preanal plate is moderately large, bordered by two semicircles of small plates, rarely by one. Scales on the upper surface of tibia are keeled and smaller than the dorsals.

27 to 33 lamellae are under the fourth toe (usually 28 to 30); 19 to 22 femoral pores are on each side.

With adults attaining up to 260 mm in total length and a robust, but flattened body structure, unusually long and flat head; species in *Wellslacerta gen. nov.* match *Hellassaurus gen. nov.* in being larger than any other species in *Podarcis* Wagler, 1830 *sensu lato.*

There is a pattern including a semi-distinct and broad dorsolateral band or stripes and usually a green, black-spotted back, a largely unnotched collar and light dorsal stripes are often found in these species usually being clearly reticulated on the back and flanks; a small massetericum; there is no bright and intense dorsolateral band (superciliary stripe) or bright colored belly.

Young specimens have spots on the underside but no obvious white spots on the sides of the tail. (modified from Henle and Klaver 1986 and Boulenger 1920).

The species in the genus *Wellslacerta gen. nov.* diverged from nominate *Podarcis* Wagler, 1830, with a type species of *Seps muralis* Laurenti, 1768, and *Thierryfreteyius gen. nov.* type species *Thierryfreteyius thierryfreteyi sp. nov.* more than 16 MYA based on the published phylogeny of Yang *et al.* (2021).

Distribution: Mainly Italy and nearby islands, Slovenia and Croatia, as well as scattered locations, outside this area in adjacent parts of Europe, some or all of these populations likely to be the result of geologically recent human translocations. **Etymology:** *Wellslacerta gen. nov.* is named in honour of

eminent Australian herpetologist, Richard Walter Wells of Drake, (about 44 km east of Tenterfield), New South Wales, Australia, who in conjunction with fellow herpetologist, Cliff Ross Wellington of Ramornie, (about 40 km west of Grafton), New South Wales, Australia has formally identified and named most genera of Australian reptiles.

Content: *Wellslacerta siculus* (Rafinesque-Schmaltz, 1810) (type species); *W. latastei* (Bedraiga, 1879).

HELLASSAURUS GEN. NOV.

LSIDurn:Isid:zoobank.org:act:D8672DC8-734C-43EF-A9AD-8D965A4B1DD4

Type species: *Lacerta peloponnesiaca* Bibron and Bory de Saint-Vincent, 1833.

Diagnosis: *Hellassaurus gen. nov.* is closely associated with and morphologically similar to the genus *Phenax* Fitzinger, 1843 (type species: *Lacerta taurica* Pallas, 1814), being resurrected from synonymy as an available name for the relevant group of lizards.

The two genera are best defined and separated from other species within *Podarcis* Wagler, 1830, *sensu lato* with a type species of *Seps muralis* Laurenti, 1768 in the same description that follows, which includes separation of the two genera (*Hellassaurus gen. nov.* and *Phenax*) from each other.

Hellassaurus gen. nov. and Phenax are separated from other species within Podarcis Wagler, 1830, sensu lato as follows: Species within the genus Phenax Fitzinger, 1843 as defined herein are separated from all other species formerly placed within Podarcis sensu lato and all other Lacertini by the following unique combination of characters:

Ventral plates smooth; collar strongly marked; digits not serrated laterally; subdigital lamellae smooth or tubercular; nostril pierced between two or free nasals and the first upper labial or separated from the latter by a narrow rim; dorsal scales small or moderate, juxtaposed or subimbricate.

Transverse series of ventral plates with rectilinear or nearly rectilinear border, in longitudinal series 6 or 8 in number; 12 to 31 femoral pores; toes more or less compressed, with 19 to 29 fourth digit lamellae; normally a single postnasal; pterygoid teeth constantly or nearly constantly present; an incomplete series of granules between the supraoculars and the superciliaries (rarely reduced to 2 to 5); frontal tricuspid at the front, the three processes extend far forward between the head shields in front of it; collar serrated; dorsal scales usually diagonally keeled; caudal scales more or less pointed behind; never more than 80 mm snout vent length or 240 mm total length.

Lizards in the closely associated genus *Hellassaurus gen. nov.* are readily separated from those in the genus *Phenax* by having a smooth-edged collar (instead of serrated). *Hellassaurus gen. nov.* are also larger in size, attaining over 85 mm snout vent and 250 mm total length (versus never more than 80 mm snout vent and 240 mm total).

Both genera also have a high head, broad neck and relatively long extremities. Supraciliary granules may be in a closed or interrupted row.

Otherwise, both *Hellassaurus gen. nov.* and *Phenax* are morphologically similar.

As defined herein the cohort of species within *Hellassaurus gen. nov.* all diverged more than 10 MYA from their nearest named relatives, based on the phylogeny published by Yang *et al.* (2021) at Fig. 2, those being the species within the genus *Phenax.*

As a pair, these two genera diverged from their next nearest relatives in *Wellingtonlacerta gen. nov.* over 13 MYA, based on the phylogeny published by Yang *et al.* (2021) at Fig. 2.

In turn these three genera diverged from their next nearest relatives in *Hosersaureea gen. nov.* more than 15 MYA based on the phylogeny published by Yang *et al.* (2021) at Fig. 2.

Distribution: Greece and some immediately adjacent areas.

Etymology: With a distribution centred on Greece, it is appropriate that the genus be named *Hellassaurus gen. nov.*. **Content:** *Hellassaurus peloponnesiaca* (Bibron and Bory de Saint-Vincent, 1833) (type species); *H. cretensis* (Wettstein, 1952); *H. erhardii* (Bedraiga, 1882); *H. levendis* (Lymberakis, Poulakakis, Kaliontzopoulou, Valakos and Mylonas, 2008); *H. thais* (Buchholz, 1960)

WELLINGTONLACERTA GEN. NOV.

LSIDurn:lsid:zoobank.org:act:BEE3EC71-D66B-465B-8D6C-06E09D4EA124

Type species: Podarcis waglerianus Gistel, 1868.

Diagnosis: Species within the genus *Wellingtonlacerta gen. nov.* as defined herein are separated from all other species formerly placed within *Podarcis sensu lato* and all other Lacertini by the following unique combination of characters:

Ventral plates smooth; collar strongly marked; digits not serrated laterally; subdigital lamellae smooth or tubercular; nostril pierced between two or free nasals and the first upper labial or separated from the latter by a narrow rim; dorsal scales small or moderate, juxtaposed or subimbricate. Maximum total length of 250 mm. These lizards have a strong tendency to be almost or completely black, except for the species *W. filfolensis,* where many specimens are not at all melanistic.

These are not melanistic as seen in insular populations of other Lacertidae and *Podarcis sensu lato* species, but rather the dark colouration is formed by the dark markings becoming either more numerous, more intense of simply larger in terms of size of spots or blotches. Lighter specimens also have expanded white spots along with a lighter dorsal colour (usually brown, grey often heavily green dorsally) as seen in particular in *W. filfolensis* (Bedraiga, 1876).

On the venter are two well-defined longitudinal rows of blue spots. The number of teeth is reduced as compared to other species within *Podarcis sensu lato*, being a maximum of 42 in the upper jaw (usually no more than 40) and no more than 39 in the lower jaw (mainly modified from Bischoff 1986).

The species in the genus *Wellingtonlacerta gen. nov.* as defined herein diverged from nominate *Podarcis* Wagler, 1830, with a type species of *Seps muralis* Laurenti, 1768 more than 18 MYA. Likewise in terms of *Thierryfreteyius gen. nov.* type species *Thierryfreteyius thierryfreteyi sp. nov.* based on the published phylogeny of Yang *et al.* (2021) at Fig. 2.

Wellingtonlacerta gen. nov. diverged from its nearest relatives, being in the genera *Phenax* Fitzinger, 1843 (type species: *Lacerta taurica* Pallas, 1814), being resurrected from synonymy as an available name and *Hellassaurus gen. nov.*, type species *Lacerta peloponnesiaca* Bibron and Bory de Saint-Vincent, 1833 more than 13 MYA based on the published phylogeny of Yang *et al.* (2021) at Fig. 2.

Distribution: Sicily and islands adjacent to the north and south the latter being between Sicily and Africa.

Etymology: *Wellingtonlacerta gen. nov.* is named in honour of eminent Australian herpetologist, Cliff Ross Wellington (AKA Ross Wellington) of Ramornie, (about 40 km west of Grafton), New South Wales, Australia, who in conjunction with fellow herpetologist, Richard Walter Wells of Drake, (about 44 km east of Tenterfield), New South Wales, Australia has formally identified and named the majority of genera of Australian reptiles.

Content: Wellingtonlacerta waglerianus (Gistel, 1868) (type species); W. filfolensis (Bedraiga, 1876); W. raffonei (Mertens, 1952).

THIERRYFRETEYIUS THIERRYFRETEYI SP. NOV. LSIDurn:Isid:zoobank.org:act:353DB4E9-F8C7-421A-BA99-0EC014237AAB

Holotype: A preserved male specimen at the Herps Collection in the Carnegie Museum of Natural History, Pittsburgh, Pennsylvania, USA, specimen number 54233, collected from between 10 and 21 km east on CA-221 (CA-7200 in 2013) from

Facinas, Cadiz Province, Andalusia, Spain, Europe, Latitude 36.1446 N., Longitude -5.7017 W.

This government-owned facility allows access to its holdings. **Paratypes:** 1/ Three preserved specimens at the Herps Collection in the Carnegie Museum of Natural History, Pittsburgh, Pennsylvania, USA, specimen numbers 52182, 52183 and 52185 all collected from 3 miles west of Algar on CA-521, Cádiz, Andalucía, Spain, Latitude 36.6586 N., Longitude -5.6546 W.

2/ Three preserved specimens at the Museum of Natural History, London, UK, being specimen number 1957.1.9.6 (one animal) collected from Coto Donana, Andalucía, Spain, Latitude 37.0427 N., Longitude -6.4344 W. and specimen number 1965.1011-1012 (two animals) collected from Malaga, Spain, Latitude 36.7178 N., Longitude -4.4256 W.

Diagnosis: The genus *Podarcis* Wagler, 1830 *sensu lato* has been divided into various genera and subgenera in this paper.

Recognised herein are *Podarcis* Wagler, 1830 (type species: *Seps muralis* Laurenti, 1768) and *Phenax* Fitzinger, 1843 (type species: *Lacerta taurica* Pallas, 1814), being resurrected from synonymy as an available name. The genus *Thierryfreteyius gen. nov.*, type species *Thierryfreteyius thierryfreteyi sp. nov.* is a group generally encompassing species formerly within genus *Podarcis* Wagler, 1830, and in the case of *Thierryfreteyius gen. nov.* is with a centre of distribution on the Iberian Peninsula and regions to the immediate south and north-east, including relevant to this paper, north-west Africa.

As a cohort of species, all diverged more than 10 MYA from their nearest named relatives. This includes all those species within what is left of *Podarcis* Wagler, 1830 *sensu lato*.

Five newly named species, all until now treated as being divergent populations of *T. vaucheri* (type locality Tanger, Northwest Africa) are within this paper formally named as follows: *Thierryfreteyius thierryfreteyi sp. nov.* from the south of the Iberian Peninsula, with a centre of distribution being Andalucia, Spain and pretty much of the same area.

Thierryfreteyius alainduboisi sp. nov. from the immediate vicinity of the hilly areas in and around Alcala la Real, Jaen Province, Spain. It is a divergent and yet range-restricted taxon.

Thierryfreteyius karimdaouesi sp. nov. from north-west Tunisia and immediately adjacent north-east Algeria.

Thierryfreteyius kheloufii sp. nov. known only from the immediate vicinity of Batna, north-east Algeria.

Thierryfreteyius mohamedmissoumi sp. nov. known only from the immediate vicinity of Azazga, Algeria. Hilly areas south of here are occupied by the type form of *T. vaucheri.*

The six relevant (above-named) species are separated from one another by the following unique combinations of characters:

T. vaucheri is separated from the other species by the combination of average adult size 50 mm or more in snoutvent length, 61-73 midbody rows, 30 or less gular scales in a longitudinal series, 23-26 subdigital lamellae under the fourth toe. *T. vaucheri* has small or tiny spots on the upper flank and larger ones below on the lower flank as well as a dominance of white or cream spotting or scales on the (original) tail, versus black.

T. thierryfreteyi sp. nov. is separated from the other species by the combination of an average adult size 48 mm or less in snoutvent length, 75-77 midbody rows, 31 or more gular scales in a longitudinal series, 27-29 subdigital lamellae under the fourth toe. *T. thierryfreteyi sp. nov.* is separated from *T. vaucheri* by having

medium sized spots on the upper flank and larger ones below, versus small on the upper flank and larger below in *T. vaucheri. T. thierryfreteyi sp. nov.* has a dominance of black spotting or

scales on the (original) tail, versus white or cream.

T. alainduboisi sp. nov. are readily separated from both *T. vaucheri* and *T. thierryfreteyi sp. nov.* by the presence of a strong reddish-brown rinse across the shoulder region and upper back. This same rinse is either absent or feint in the other two species.

In both *T. vaucheri* and *T. thierryfreteyi sp. nov.* there are closely spaced light spots along the dorso-lateral edge forming lines. In some specimens, these merge to form complete lines.

In *T. alainduboisi sp. nov.* the same lines are well-defined and thick, with no obvious sign of being derived from dots or the merging of dots.

The three north east Algerian taxa (also entering Tunisia), being *T. karimdaouesi sp. nov.*, *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.*) are all easily separated as a group from the three above taxa from Morocco, north-east and central north Algeria and the south of Iberia (*T. vaucheri, T. thierryfreteyi sp. nov.* and *T. alainduboisi sp. nov.*) by the obvious absence of any well-defined line or stripe (either composed of close spots or as a line in some form) running along the dorsolateral edge.

Instead, the dorsum colouration is continuous to the outer edge of the dorsolateral edge.

The three species *T. karimdaouesi sp. nov.*, *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.* have a well-defined black or blackish coloured band running along the upper third of the flank, which contrasts with the same band being usually poorly defined in the other three species, with the same band also occupying half the flank in *T. vaucheri, T. thierryfreteyi sp. nov.* and *T. alainduboisi sp. nov.*, rather than the far narrower top third only in the three north east Algerian taxa.

T. karimdaouesi sp. nov. is readily separated from *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.* by the fact that in breeding males, the dark of the upper flanks intrudes onto the dorsum, the result being significant reduced green colouration. In *T. karimdaouesi sp. nov.* the head is a similar colour to that of the greenish-body and there are large irregularly shaped black blotches on the head, especially posteriorly. In *T. karimdaouesi sp. nov.* the back forms large well defined paired patches, running paravertebrally. The dorsum is not greenish with numerous tiny dark flecks or spots.

Breeding males in both *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.* are readily separated from those of *T. karimdaouesi sp. nov.* by having light brown upper surfaces of the head, in stark contrast to the greenish dorsal surface of the body.

T. kheloufii sp. nov. is readily separated from both *T. karimdaouesi sp. nov.* and *T. mohamedmissoumi sp. nov.* in that breeding adult males have a green dorsum which has numerous tiny greyish-brown semi-distinct flecks all over it.

Breeding male *T. mohamedmissoumi sp. nov.* are somewhat intermediate in colour between *T. karimdaouesi sp. nov.* and *T. mohamedmissoumi sp. nov.* in that breeding adult males have a reduced amount of green on the dorsum and the dark colouration is not in the form of numerous tiny spots or flecks.

Instead it is the form of semidistinct dark marbling (the areas of dark being of moderate size), entirely on the dorsum and not entering or coming from the lateral edge or flanks (as is seen in *T. karimdaouesi sp. nov.*).

The original tail of adult *T. karimdaouesi sp. nov.* has prominent dark pigment on the top and sides, versus not so in *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.* The latter two species do have dark pigment on their original tails as adults, but this is faded and reduced in size and intensity.

Light green, yellow or white spots on the upper flanks of breeding adult male *T. mohamedmissoumi sp. nov.* are large and prominent, versus small to medium and not very bold in *T. kheloufii sp. nov.*

The upper flank of adult breeding male *T. karimdaouesi sp. nov.* is generally blackish in colour all over. However, where spotting would have been there is instead a barely discernible medium to dark brown smudging of pigment on the otherwise blackish surface.

The six preceding species, until now all treated as populations of *Podarcis vaucheri* Boettger, 1883 are separated from all other species within *Podarcis* Wagler, 1830 *sensu lato* by the following

unique combination of characters:

Distinctive on a glance from the smallish body scales and the absence of a dark vertebral streak or series of spots, this latter feature only shared with *T. bocagei* (Lopez-Seoane, 1885) and some south-west Asian forms.

Head is fairly short, not more than 1.5 times as long as broad, and moderately depressed, its depth equalling the distance between the anterior corner of the eye and the tympanum.

(Note that in contrast *T. bocagei* (Lopez-Seoane, 1885) has a strongly depressed head, with its depth equalling the distance between the centre or the posterior border of the eye and the tympanum).

Hind limb reaches the shoulder in males, the elbow in females; foot is one and one sixth to one and one third times the length of the head.

Tail is one and two thirds to two times as long as the head and body.

Head-shields are typical as for all *Podarcis sensu lato* species, but parietals are shorter than usual,

usually barely longer than broad; the series of granules between the supraoculars and the superciliaries is complete, or first superciliary is in contact with the second supraocular; parietal in contact with the upper postocular; usually 4 upper labials anterior to the subocular, which is narrower beneath than above; masseteric shield is present which may be divided into two or three.

Scales are finely granular, distinctly keeled, with 61 to 76 mid body rows; the 36 to 57 transverse series, in the middle of the back, correspond to the length of the head; 3 and 4 on the side correspond

to the ventral plate.

Ventral plates in 24 to 27 transverse series in males, 30 to 32 in females.

Preanal shield moderately large bordered by one or two semicircles of small shields.

Scales on upper surface of tibia a little smaller than dorsals. 13-20 femoral pores on each side.

23 to 28 lamellae under the fourth toe.

Caudal scales rather oblique, forming subequal whorls or alternately longer and shorter, upper ones are moderately or strongly keeled, truncate or very obtusely pointed behind; 25 to 35 scales in the fourth or fifth whorl.

Olive-grey above, with small black spots or reticulations; a more or less defined dark lateral band, bordered above by a whitish streak or series of white spots; no dark vertebral streak or series of spots; limbs with round light, dark-edged spots; upper surface of head more or less spotted or marbled with black; two series of white, black-edged spots along each side of the tail. Belly white or pale orange, uniform or with a few scattered black dots; throat with black dots (modified from Boulenger 1920).

Images of *Thierryfreteyius thierryfreteyi sp. nov.* in life are depicted online at:

https://www.inaturalist.org/observations/13751111

photographed at Cadiz, Spain by Yeray Seminario on 24 June 2018,

and

https://www.inaturalist.org/observations/151583094

photographed at Cádiz, Spain by Yvonne Nielsen on 17 March 2023,

and

https://www.inaturalist.org/observations/41722746

photographed by Juan Manuel Palmero Sánchez at Cadiz, Spain on 14 March 2015,

and

https://www.inaturalist.org/observations/68803857

photographed by Phil Benstead on 16 March 2016 at Benaoján,

Málaga, Spain.

Images of *T. alainduboisi sp. nov.* are depicted in life online at: https://www.inaturalist.org/observations/262281244 (holotype depicted in this paper)

photographed by Elyas Granero 17 February 2025 at Jaén, Spain and at:

https://www.inaturalist.org/observations/71629215

photographed by Tom Hickey at Puente de la Sierra, Jaén, Spain on 20 March 2021, and

https://www.inaturalist.org/observations/66964643

photographed by Tom Hickey at Jaén, Spain on 23 December 2020,

and

https://www.inaturalist.org/observations/61558843

photographed by Luis González at La Guardia de Jaén, Spain on 3 October Oct 2020, and

https://www.flickr.com/photos/50873760@N02/33236281548 photographed by Ray Hamilton near Alcala la Real, Jaen Province, Spain, on 15 February 2019,

and

https://www.flickr.com/photos/50873760@N02/31942862957/ photographed by Ray Hamilton near Alcala la Real, Jaen Province, Spain, on January 26, 2019.

Images of *T. karimdaouesi sp. nov.* are depicted in life online at: https://www.inaturalist.org/observations/217141768

photographed by Gintautas Steiblys at Aïn Draham, Tunisia on 12 May 2024,

and

https://www.inaturalist.org/observations/231257907

photographed by Wouter Beukema at Aïn Draham, Tunesia on 14 May 2009,

and

https://www.inaturalist.org/observations/149281553

photographed by "probreviceps" at Ayn Darahim, Tunisia on 10 October 2004.

Images of *T. kheloufii sp. nov.* are depicted in life online at: https://www.inaturalist.org/observations/116524695 (holotype depicted in this paper)

photographed by Abdenour Kheloufi within 5 km of Batna, Algeria,

and

https://www.inaturalist.org/observations/80743727

photographed by Axel Castiel at Inoughissen, (30 km SE of Batna) Algeria on 28 May 2021.

Images of *T. mohamedmissoumi sp. nov.* are depicted in life online at:

https://www.inaturalist.org/observations/142127346 (holotype depicted in this paper)

photographed by Mohamed Missaum at Yakouren, Algeria (5 km east of Azazga, Algeria) on 22 July 2022, and

nd

https://www.inaturalist.org/observations/119701269

photographed by Mohamed Missaum at Akerrou, Algeria (12 km northeast of Azazga, Algeria) on 25 April 2014, and

https://www.inaturalist.org/observations/134054787

photographed by Mohamed Missaum at Aghrib, Algeria (12 km north northeast of Azazga, Algeria) on 4 April 2014, and

https://www.inaturalist.org/observations/142127313

photographed by Mohamed Missaum at Akerrou, Algeria (12 km

northeast of Azazga, Algeria) on 18 June 2014.

Distribution: *Thierryfreteyius thierryfreteyi sp. nov.* is a taxon from the south of the Iberian Peninsula, with a centre of distribution being Andalucia, Spain and pretty much of the same area and not including anywhere else in Iberia except for a few immediately adjacent parts of Spain.

Etymology: *Thierryfreteyius thierryfreteyi sp. nov.* is named in honour of Thierry Frétey of Saint-Maugan, France, for services to herpetology. The spelling and construction of the generic name and species name should not be amended unless absolutely mandatory.

THIERRYFRETEYIUS ALAINDUBOISI SP. NOV. LSIDurn:Isid:zoobank.org:act:9B06ACEC-DFB7-4B81-9FCE-8DD617BA4932

Holotype: A live adult male specimen depicted in the image and shown below on this page and also seen in the same image at: https://www.inaturalist.org/observations/262281244

taken at Pegalajar, Jaén, Spain, Latitude 37.7406 N., Longitude -3.6458 W. (8 km east of Jaén city). by Elyas Granero on 17 February 2025 (online as of 13 March 2025).

Paratypes: The following five specimens depicted in the images posted online (as of 13 March 2025) as listed below:

https://www.inaturalist.org/observations/71629215 photographed by Tom Hickey on 20 March 2021, and

https://www.inaturalist.org/observations/66964643 photographed by Tom Hickey on 23 December 2020, and

https://www.inaturalist.org/observations/61558843 photographed by Luis González on 3 October 2020, and

https://www.flickr.com/photos/50873760@N02/33236281548 photographed by Ray Hamilton on 15 February 2019, and

https://www.flickr.com/photos/50873760@N02/31942862957/ photographed by Ray Hamilton on 26 January 2019,

all seen and photographed at or immediately adjacent to Jaén, Spain.

Diagnosis: The genus *Podarcis* Wagler, 1830 *sensu lato* has been divided into various genera and subgenera in this paper. Recognised herein are *Podarcis* Wagler, 1830 (type species: *Seps muralis* Laurenti, 1768) and *Phenax* Fitzinger, 1843 (type species: *Lacerta taurica* Pallas, 1814), being resurrected from



synonymy as an available name. The genus *Thierryfreteyius gen. nov.*, type species *Thierryfreteyius thierryfreteyi sp. nov.* is a group generally encompassing species with a centre of distribution on the Iberian Peninsula and regions to the immediate south and north-east, including relevant to this paper, north-west Africa.

As a cohort of species, all diverged more than 10 MYA from their nearest named relatives. This includes all those species within what is left of *Podarcis* Wagler, 1830 *sensu lato*.

Five newly named species, all until now treated as being divergent populations of *T. vaucheri* (type locality Tanger, Northwest Africa) are within this paper formally named as follows:

Thierryfreteyius thierryfreteyi sp. nov. from the south of the Iberian Peninsula, with a centre of distribution being Andalucia, Spain and pretty much of the same area.

Thierryfreteyius alainduboisi sp. nov. from the immediate vicinity of the hilly areas in and around Alcala la Real, Jaen Province, Spain. It is a divergent and yet range-restricted taxon.

Thierryfreteyius karimdaouesi sp. nov. from north-west Tunisia and immediately adjacent north-east Algeria.

Thierryfreteyius kheloufii sp. nov. known only from the immediate vicinity of Batna, north-east Algeria.

Thierryfreteyius mohamedmissoumi sp. nov. known only from the immediate vicinity of Azazga, Algeria. Hilly areas south of here are occupied by the type form of *T. vaucheri*.

The six relevant (above-named) species are separated from one another by the following unique combinations of characters:

T. vaucheri is separated from the other species by the combination of average adult size 50 mm or more in snoutvent length, 61-73 midbody rows, 30 or less gular scales in a longitudinal series, 23-26 subdigital lamellae under the fourth toe. *T. vaucheri* has small or tiny spots on the upper flank and larger

ones below on the lower flank as well as a dominance of white or cream spotting or scales on the (original) tail, versus black.

T. thierryfreteyi sp. nov. is separated from the other species by the combination of an average adult size 48 mm or less in snoutvent length, 75-77 midbody rows, 31 or more gular scales in a longitudinal series, 27-29 subdigital lamellae under the fourth toe. *T. thierryfreteyi sp. nov.* is separated from *T. vaucheri* by having

medium sized spots on the upper flank and larger ones below, versus small on the upper flank and larger below in *T. vaucheri*. *T. thierryfreteyi sp. nov*. has a dominance of black spotting or scales on the (original) tail, versus white or cream.

T. alainduboisi sp. nov. are readily separated from both *T. vaucheri* and *T. thierryfreteyi sp. nov.* by the presence of a strong reddish-brown rinse across the shoulder region and upper back. This same rinse is either absent or feint in the other two species. In both *T. vaucheri* and *T. thierryfreteyi sp. nov.* there are closely spaced light spots along the dorso-lateral edge forming lines. In some specimens, these merge to form complete lines.

In *T. alainduboisi sp. nov.* the same lines are well-defined and thick, with no obvious sign of being derived from dots or the merging of dots.

The three north east Algerian taxa (also entering Tunisia), being *T. karimdaouesi sp. nov.*, *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.*) are all easily separated as a group from the three above taxa from Morocco, north-east and central north Algeria and the south of Iberia (*T. vaucheri, T. thierryfreteyi sp. nov.* and *T. alainduboisi sp. nov.*) by the obvious absence of any well-defined line or stripe (either composed of close spots or as a line in some form) running along the dorsolateral edge.

Instead, the dorsum colouration is continuous to the outer edge of the dorsolateral edge.

The three species *T. karimdaouesi sp. nov.*, *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.* have a well-defined black or blackish coloured band running along the upper third of the flank, which contrasts with the same band being usually poorly defined

in the other three species, with the same band also occupying half the flank in *T. vaucheri, T. thierryfreteyi sp. nov.* and *T. alainduboisi sp. nov.*, rather than the far narrower top third only in the three north east Algerian taxa.

T. karimdaouesi sp. nov. is readily separated from *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.* by the fact that in breeding males, the dark of the upper flanks intrudes onto the dorsum, the result being significant reduced green colouration. In *T. karimdaouesi sp. nov.* the head is a similar colour to that of the greenish-body and there are large irregularly shaped black blotches on the head, especially posteriorly. In *T. karimdaouesi sp. nov.* the back forms large well defined paired patches, running paravertebrally. The dorsum is not greenish with numerous tiny dark flecks or spots.

Breeding males in both *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.* are readily separated from those of *T. karimdaouesi sp. nov.* by having light brown upper surfaces of the head, in stark contrast to the greenish dorsal surface of the body.

T. kheloufii sp. nov. is readily separated from both *T. karimdaouesi sp. nov.* and *T. mohamedmissoumi sp. nov.* in that breeding adult males have a green dorsum which has numerous tiny greyish-brown semi-distinct flecks all over it.

Breeding male *T. mohamedmissoumi sp. nov.* are somewhat intermediate in colour between *T. karimdaouesi sp. nov.* and *T. mohamedmissoumi sp. nov.* in that breeding adult males have a reduced amount of green on the dorsum and the dark colouration is not in the form of numerous tiny spots or flecks.

Instead, it is the form of semidistinct dark marbling (the areas of dark being of moderate size), entirely on the dorsum and not entering or coming from the lateral edge or flanks (as is seen in *T. karimdaouesi sp. nov.*).

The original tail of adult *T. karimdaouesi sp. nov.* has prominent dark pigment on the top and sides, versus not so in *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.* The latter two species do have dark pigment on their original tails as adults, but this is faded and reduced in size and intensity.

Light green, yellow or white spots on the upper flanks of breeding adult male *T. mohamedmissoumi sp. nov.* are large and prominent, versus small to medium and not very bold in *T. kheloufii sp. nov.*.

The upper flank of adult breeding male *T. karimdaouesi sp. nov.* is generally blackish in colour all over. However, where spotting would have been there is instead a barely discernible medium to dark brown smudging of pigment on the otherwise blackish surface.

The six preceding species, until now all treated as populations of *Podarcis vaucheri* Boettger, 1883 are separated from all other species within *Podarcis* Wagler, 1830 *sensu lato* by the following unique combination of characters:

Distinctive on a glance from the smallish body scales and the absence of a dark vertebral streak or series of spots, this latter feature only shared with *T. bocagei* (Lopez-Seoane, 1885) and some south-west Asian forms.

Head is fairly short, not more than 1.5 times as long as broad, and moderately depressed, its depth equalling the distance between the anterior corner of the eye and the tympanum.

(Note that in contrast *T. bocagei* (Lopez-Seoane, 1885) has a strongly depressed head, with its depth equalling the distance between the centre or the posterior border of the eye and the tympanum).

Hind limb reaches the shoulder in males, the elbow in females; foot is one and one sixth to one and one third times the length of the head.

Tail is one and two thirds to two times as long as the head and body.

Head-shields are typical as for all *Podarcis sensu lato* species, but parietals are shorter than usual,

Hoser 2025 - Australasian Journal of Herpetology 74:28-52.

usually barely longer than broad; the series of granules between the supraoculars and the superciliaries is complete, or first superciliary is in contact with the second supraocular; parietal in contact with the upper postocular; usually 4 upper labials anterior to the subocular, which is narrower beneath than above; masseteric shield present which may be divided into two or three.

Scales are finely granular, distinctly keeled, with 61 to 76 mid body rows; the 36 to 57 transverse series, in the middle of the back, correspond to the length of the head; 3 and 4 on the side correspond

to the ventral plate.

Ventral plates in 24 to 27 transverse series in males, 30 to 32 in females

Preanal shield moderately large bordered by one or two semicircles of small shields.

Scales on upper surface of tibia a little smaller than dorsals. 13-20 femoral pores on each side.

23 to 28 lamellae under the fourth toe.

Caudal scales rather oblique, forming subequal whorls or alternately longer and shorter, upper moderately or strongly keeled, truncate or very obtusely pointed behind; 25 to 35 scales in the fourth or fifth whorl.

Olive-grey above, with small black spots or reticulations; a more or less defined dark lateral band, bordered above by a whitish streak or series of white spots; no dark vertebral streak or series of spots; limbs with round light, dark-edged spots; upper surface of head more or less spotted or marbled with black; two series of white, black-edged spots along each side of the tail. Belly white or pale orange, uniform or with a few scattered black dots; throat with black dots (modified from Boulenger 1920).

Images of Thierryfreteyius thierryfreteyi sp. nov. in life are depicted online at:

https://www.inaturalist.org/observations/13751111

photographed at Cadiz, Spain by Yeray Seminario on 24 June 2018.

and

https://www.inaturalist.org/observations/151583094

photographed at Cádiz, Spain by Yvonne Nielsen on 17 March 2023.

and

https://www.inaturalist.org/observations/41722746

photographed by Juan Manuel Palmero Sánchez at Cadiz, Spain on 14 March 2015. and

https://www.inaturalist.org/observations/68803857

photographed by Phil Benstead on 16 March 2016 at Benaoján, Málaga, Spain.

Images of T. alainduboisi sp. nov. are depicted in life online at: https://www.inaturalist.org/observations/262281244 (holotype depicted in this paper)

photographed by Elyas Granero 17 February 2025 at Pegalajar, Jaén, Spain, Latitude 37.7406 N., Longitude -3.6458 W. (8 km east of Jaén city), and

https://www.inaturalist.org/observations/71629215

photographed by Tom Hickey at Puente de la Sierra, Jaén, Spain on 20 March 2021,

and https://www.inaturalist.org/observations/66964643

photographed by Tom Hickey at Jaén, Spain on 23 December 2020.

and

https://www.inaturalist.org/observations/61558843

photographed by Luis González at La Guardia de Jaén, Spain on 3 October Oct 2020,

Hoser 2025 - Australasian Journal of Herpetology 74:28-52. and https://www.flickr.com/photos/50873760@N02/33236281548 photographed by Ray Hamilton near Alcala la Real, Jaen Province, Spain, on 15 February 2019, and

https://www.flickr.com/photos/50873760@N02/31942862957/ photographed by Ray Hamilton near Alcala la Real, Jaen Province, Spain, on January 26, 2019.

Images of T. karimdaouesi sp. nov. are depicted in life online at: https://www.inaturalist.org/observations/217141768

photographed by Gintautas Steiblys at Aïn Draham, Tunisia on 12 May 2024,

and

https://www.inaturalist.org/observations/231257907

photographed by Wouter Beukema at Aïn Draham, Tunesia on 14 May 2009,

and

https://www.inaturalist.org/observations/149281553 photographed by "probreviceps" at Ayn Darahim, Tunisia on 10 October 2004.

Images of T. kheloufii sp. nov. are depicted in life online at: https://www.inaturalist.org/observations/116524695 (holotype depicted in this paper)

photographed on 22 May 2022 by Abdenour Kheloufi within 5 km of Batna, Algeria,

and

https://www.inaturalist.org/observations/80743727

photographed by Axel Castiel at Inoughissen, (30 km SE of Batna) Algeria on 28 May 2021.

Images of T. mohamedmissoumi sp. nov. are depicted in life online at:

https://www.inaturalist.org/observations/142127346 (holotype depicted in this paper)

photographed by Mohamed Missaum at Yakouren, Algeria (5 km east of Azazga, Algeria) on 22 July 2022, and

https://www.inaturalist.org/observations/119701269

photographed by Mohamed Missaum at Akerrou, Algeria (12 km northeast of Azazga, Algeria) on 25 April 2014, and

https://www.inaturalist.org/observations/134054787

photographed by Mohamed Missaum at Aghrib, Algeria (12 km north northeast of Azazga, Algeria) on 4 April 2014, and

https://www.inaturalist.org/observations/142127313

photographed by Mohamed Missaum at Akerrou, Algeria (12 km northeast of Azazga, Algeria) on 18 June 2014.

Distribution: Thierryfreteyius alainduboisi sp. nov. is a taxon from the immediate vicinity of the hilly areas in and around Alcala la Real, Jaen Province, Spain.

It is a divergent and yet range-restricted taxon.

Etymology: Thierryfreteyius alainduboisi sp. nov. is named in honour of Alain Dubois of Paris, France, who for many years has been a curator at Muséum national d'Histoire Naturelle, Paris, France for his services to herpetology and zoological nomenclature more widely.

THIERRYFRETEYIUS KARIMDAOUESI SP. NOV.

LSIDurn:Isid:zoobank.org:act:F5829F8D-52FC-40E0-A69B-2A23BBADA0BE

Holotype: A preserved specimen at the herpetology collection of the California Academy of Sciences, San Francisco, California, USA, specimen number CAS HERP 247033 collected from Ain Draham, Suq al Arba a, Tunisia, Africa, Latitude 36.47 N., Longitude 8.42 E.

This facility allows access to its holdings.

Paratypes: 1/ A preserved specimen at the herpetology collection of the California Academy of Sciences, San Francisco, California, USA, specimen number CAS HERP 247034 collected from Suq al Arba a (close to Tabarka), Tunisia, Africa, Latitude 36.95 N., Longitude 8.75 E.

2/ A preserved specimen at the herpetology collection of the California Academy of Sciences, San Francisco, California, USA, specimen number CAS HERP 247036 collected from Tabarka, Jundubah Gov., Tunisia, Africa, Latitude 36.9455 N., Longitude 8.7455 E.

3/ Ten preserved specimens at the Museum of Natural History, London, UK, specimen numbers BMNH 1965.413-422 collected from Dougga, Tunisia, Africa, Latitude 36.4229 N., Longitude 9.2193 E.

4/ A preserved specimen at the herpetology collection of the Carnegie Museum of Natural History, Pittsburgh, Pennsylvania, USA, specimen number CM Herps 58413 collected from Annaba, 6 km north of Saraidi on the road to Plage De Saraidi, Algeria, Africa.

Diagnosis: The genus *Podarcis* Wagler, 1830 *sensu lato* has been divided into various genera and subgenera in this paper. Recognised herein are *Podarcis* Wagler, 1830 (type species: *Seps muralis* Laurenti, 1768) and *Phenax* Fitzinger, 1843 (type species: *Lacerta taurica* Pallas, 1814), being resurrected from synonymy as an available name. The genus *Thierryfreteyius gen. nov.*, type species *Thierryfreteyius thierryfreteyi sp. nov.* is a group generally encompassing species with a centre of distribution on the Iberian Peninsula and regions to the immediate south and north-east, including relevant to this paper, north-west Africa.

As a cohort of species, all diverged more than 10 MYA from their nearest named relatives. This includes all those species within what is left of *Podarcis* Wagler, 1830 *sensu lato*.

Five newly named species, all until now treated as being divergent populations of *T. vaucheri* (type locality Tanger, Northwest Africa) are within this paper formally named as follows:

Thierryfreteyius thierryfreteyi sp. nov. from the south of the Iberian Peninsula, with a centre of distribution being Andalucia, Spain and pretty much of the same area.

Thierryfreteyius alainduboisi sp. nov. from the immediate vicinity of the hilly areas in and around Alcala la Real, Jaen Province, Spain. It is a divergent and yet range-restricted taxon.

Thierryfreteyius karimdaouesi sp. nov. from north-west Tunisia and immediately adjacent north-east Algeria.

Thierryfreteyius kheloufii sp. nov. known only from the immediate vicinity of Batna, north-east Algeria.

Thierryfreteyius mohamedmissoumi sp. nov. known only from the immediate vicinity of Azazga, Algeria. Hilly areas south of here are occupied by the type form of *T. vaucheri.*

The six relevant (above-named) species are separated from one another by the following unique combinations of characters:

T. vaucheri is separated from the other species by the combination of average adult size 50 mm or more in snoutvent length, 61-73 midbody rows, 30 or less gular scales in a longitudinal series, 23-26 subdigital lamellae under the fourth toe. *T. vaucheri* has small or tiny spots on the upper flank and larger ones below on the lower flank as well as a dominance of white or

cream spotting or scales on the (original) tail, versus black. *T. thierryfreteyi sp. nov.* is separated from the other species by the combination of an average adult size 48 mm or less in snoutvent length, 75-77 midbody rows, 31 or more gular scales in a longitudinal series, 27-29 subdigital lamellae under the fourth toe.

T. thierryfreteyi sp. nov. is separated from *T. vaucheri* by having medium sized spots on the upper flank and larger ones below, versus small on the upper flank and larger below in *T. vaucheri. T. thierryfreteyi sp. nov.* has a dominance of black spotting or

scales on the (original) tail, versus white or cream. *T. alainduboisi sp. nov.* are readily separated from both *T. vaucheri* and *T. thierryfreteyi sp. nov.* by the presence of a strong reddish-brown rinse across the shoulder region and upper back. This same rinse is either absent or feint in the other two species. In both *T. vaucheri* and *T. thierryfreteyi sp. nov.* there are closely spaced light spots along the dorso-lateral edge forming lines. In some specimens, these merge to form complete lines.

In *T. alainduboisi sp. nov.* the same lines are well-defined and thick, with no obvious sign of being derived from dots or the merging of dots.

The three north east Algerian taxa (also entering Tunisia), being *T. karimdaouesi sp. nov.*, *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.*) are all easily separated as a group from the three above taxa from Morocco, north-east and central north Algeria and the south of Iberia (*T. vaucheri, T. thierryfreteyi sp. nov.* and *T. alainduboisi sp. nov.*) by the obvious absence of any well-defined line or stripe (either composed of close spots or as a line in some form) running along the dorsolateral edge. Instead, the dorsum colouration is continuous to the outer edge of the dorsolateral edge.

The three species *T. karimdaouesi sp. nov.*, *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.* have a well-defined black or blackish coloured band running along the upper third of the flank, which contrasts with the same band being usually poorly defined in the other three species, with the same band also occupying half the flank in *T. vaucheri, T. thierryfreteyi sp. nov.* and *T. alainduboisi sp. nov.*, rather than the far narrower top third only in the three north east Algerian taxa.

T. karimdaouesi sp. nov. is readily separated from *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.* by the fact that in breeding males, the dark of the upper flanks intrudes onto the dorsum, the result being significant reduced green colouration. In *T. karimdaouesi sp. nov.* the head is a similar colour to that of the greenish-body and there are large irregularly shaped black blotches on the head, especially posteriorly. In *T. karimdaouesi sp. nov.* the back forms large well defined paired patches, running paravertebrally. The dorsum is not greenish with numerous tiny dark flecks or spots.

Breeding males in both *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.* are readily separated from those of *T. karimdaouesi sp. nov.* by having light brown upper surfaces of the head, in stark contrast to the greenish dorsal surface of the body.

T. kheloufii sp. nov. is readily separated from both *T. karimdaouesi sp. nov.* and *T. mohamedmissoumi sp. nov.* in that breeding adult males have a green dorsum which has numerous tiny greyish-brown semi-distinct flecks all over it.

Breeding male *T. mohamedmissoumi sp. nov.* are somewhat intermediate in colour between *T. karimdaouesi sp. nov.* and *T. mohamedmissoumi sp. nov.* in that breeding adult males have a reduced amount of green on the dorsum and the dark colouration is not in the form of numerous tiny spots or flecks.

Instead it is the form of semidistinct dark marbling (the areas of dark being of moderate size), entirely on the dorsum and not entering or coming from the lateral edge or flanks (as is seen in *T. karimdaouesi sp. nov.*).

The original tail of adult *T. karimdaouesi sp. nov.* has prominent dark pigment on the top and sides, versus not so in *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.* The latter two species do have dark pigment on their original tails as adults, but this is faded and reduced in size and intensity.

Light green, yellow or white spots on the upper flanks of breeding adult male *T. mohamedmissoumi sp. nov.* are large and prominent, versus small to medium and not very bold in *T. kheloufii sp. nov.*

The upper flank of adult breeding male *T. karimdaouesi sp. nov.* is generally blackish in colour all over. However, where spotting

would have been there is instead a barely discernible medium to dark brown smudging of pigment on the otherwise blackish surface

The six preceding species, until now all treated as populations of Podarcis vaucheri Boettger, 1883 are separated from all other species within Podarcis Wagler, 1830 sensu lato by the following unique combination of characters:

Distinctive on a glance from the smallish body scales and the absence of a dark vertebral streak or series of spots, this latter feature only shared with T. bocagei (Lopez-Seoane, 1885) and some south-west Asian forms.

Head is fairly short, not more than 1.5 times as long as broad, and moderately depressed, its depth equalling the distance between the anterior corner of the eye and the tympanum.

(Note that in contrast T. bocagei (Lopez-Seoane, 1885) has a strongly depressed head, with its depth equalling the distance between the centre or the posterior border of the eye and the tympanum).

Hind limb reaches the shoulder in males, the elbow in females; foot is one and one sixth to one and one third times the length of the head.

Tail is one and two thirds to two times as long as the head and body.

Head-shields are typical as for all Podarcis sensu lato species, but parietals are shorter than usual.

usually barely longer than broad; the series of granules between the supraoculars and the superciliaries is complete, or first superciliary is in contact with the second supraocular; parietal in contact with the upper postocular; usually 4 upper labials anterior to the subocular, which is narrower beneath than above: masseteric shield present which may be divided into two or three.

Scales are finely granular, distinctly keeled, with 61 to 76 mid body rows; the 36 to 57 transverse series, in the middle of the back, correspond to the length of the head; 3 and 4 on the side correspond

to the ventral plate.

Ventral plates in 24 to 27 transverse series in males, 30 to 32 in females.

Preanal shield moderately large bordered by one or two semicircles of small shields.

Scales on upper surface of tibia a little smaller than dorsals. 13-20 femoral pores on each side.

23 to 28 lamellae under the fourth toe.

Caudal scales rather oblique, forming subequal whorls or

alternately longer and shorter, upper moderately or strongly keeled, truncate or very obtusely pointed behind; 25 to 35 scales in the fourth or fifth whorl.

Olive-grey above, with small black spots or reticulations; a more or less defined dark lateral band, bordered above by a whitish streak or series of white spots: no dark vertebral streak or series of spots; limbs with round light, dark-edged spots; upper surface of head more or less spotted or marbled with black; two series of white, black-edged spots along each side of the tail. Belly white or pale orange, uniform or with a few scattered black dots; throat with black dots (modified from Boulenger 1920).

Images of Thierryfreteyius thierryfreteyi sp. nov. in life are depicted online at:

https://www.inaturalist.org/observations/13751111

photographed at Cadiz, Spain by Yeray Seminario on 24 June 2018,

and

https://www.inaturalist.org/observations/151583094

photographed at Cádiz, Spain by Yvonne Nielsen on 17 March 2023,

and

https://www.inaturalist.org/observations/41722746

photographed by Juan Manuel Palmero Sánchez at Cadiz, Spain on 14 March 2015, and

https://www.inaturalist.org/observations/68803857

photographed by Phil Benstead on 16 March 2016 at Benaoján, Málaga, Spain.

Images of T. alainduboisi sp. nov. are depicted in life online at: https://www.inaturalist.org/observations/262281244 (holotype depicted in this paper)

photographed by Elyas Granero 17 February 2025 at Pegalajar, Jaén, Spain, Latitude 37.7406 N., Longitude -3.6458 W. (8 km east of Jaén city), and

https://www.inaturalist.org/observations/71629215

photographed by Tom Hickey at Puente de la Sierra, Jaén, Spain on 20 March 2021,

https://www.inaturalist.org/observations/66964643

photographed by Tom Hickey at Jaén, Spain on 23 December 2020.

and

and

https://www.inaturalist.org/observations/61558843

photographed by Luis González at La Guardia de Jaén, Spain on 3 October Oct 2020.

and

https://www.flickr.com/photos/50873760@N02/33236281548 photographed by Ray Hamilton near Alcala la Real, Jaen Province, Spain, on 15 February 2019,

and

https://www.flickr.com/photos/50873760@N02/31942862957/ photographed by Ray Hamilton near Alcala la Real, Jaen Province, Spain, on January 26, 2019.

Images of T. karimdaouesi sp. nov. are depicted in life online at: https://www.inaturalist.org/observations/217141768

photographed by Gintautas Steiblys at Aïn Draham, Tunisia on 12 May 2024,

and

https://www.inaturalist.org/observations/231257907

photographed by by Wouter Beukema at Aïn Draham, Tunesia on 14 May 2009,

and

https://www.inaturalist.org/observations/149281553 photographed by "probreviceps" at Ayn Darahim, Tunisia on 10

October 2004. Images of T. kheloufii sp. nov. are depicted in life online at:

https://www.inaturalist.org/observations/116524695 (holotype depicted in this paper)

photographed by Abdenour Kheloufi within 5 km of Batna, Algeria on 10 May 2022, and

https://www.inaturalist.org/observations/80743727

photographed by Axel Castiel at Inoughissen, (30 km SE of Batna) Algeria on 28 May 2021.

Images of T. mohamedmissoumi sp. nov. are depicted in life online at:

https://www.inaturalist.org/observations/142127346 (holotype depicted in this paper)

photographed by Mohamed Missaum at Yakouren, Algeria (5 km east of Azazga, Algeria) on 22 July 2022, and

https://www.inaturalist.org/observations/119701269 photographed by Mohamed Missaum at Akerrou, Algeria (12 km northeast of Azazga, Algeria) on 25 April 2014, and

https://www.inaturalist.org/observations/134054787

photographed by Mohamed Missaum at Aghrib, Algeria (12 km north northeast of Azazga, Algeria) on 4 April 2014, and

https://www.inaturalist.org/observations/142127313

photographed by Mohamed Missaum at Akerrou, Algeria (12 km northeast of Azazga, Algeria) on 18 June 2014.

Distribution: *Thierryfreteyius karimdaouesi sp. nov.* is a taxon from north-west Tunisia and immediately adjacent north-east Algeria, generally close to the coast and mountains.

Etymology: *Thierryfreteyius karimdaouesi sp. nov.* is named in honour of Karin Daoues of Paris, France, owner of Ferme Tropicale a major educational resource for herpetologists in Paris and those who come to visit from elsewhere.

He has pioneered the successful keeping of numerous species of reptiles and amphibians for decades.

THIERRYFRETEYIUS KHELOUFII SP. NOV.

LSIDurn:lsid:zoobank.org:act:29946267-EE6E-4539-A117-553566BB8BCD

Holotype: A live adult male specimen depicted in the image and shown within or adjacent to the text of this formal description, being on page 43 of this paper and also seen in the same image at:

https://www.inaturalist.org/observations/116524695 (online as of 13 March 2025)

photographed by Abdenour Kheloufi within 5 km of Batna, Algeria, Africa, (Latitude 35.5446 N., Longitude 6.1597 E.) on 10 May 2022, location of specimen photo being at Latitude 35.579974 N., Longitude 6.076526 E.

Paratype: An adult male specimen depicted in the image at https://www.inaturalist.org/observations/80743727 (online as of 13 March 2025)

photographed by Axel Castiel at Inoughissen, Algeria, Africa, Latitude 35.3048 N., Longitude 6.5490 E. on 28 May 2021 (30 km SE of Batna, Latitude 35.5446 N., Longitude 6.1597 E.).

Diagnosis: The genus *Podarcis* Wagler, 1830 sensu lato has been divided into various genera and subgenera in this paper.

Recognised herein are *Podarcis* Wagler, 1830 (type species: *Seps muralis* Laurenti, 1768) and *Phenax* Fitzinger, 1843 (type species: *Lacerta taurica* Pallas, 1814), being resurrected from synonymy as an available name. The genus *Thierryfreteyius gen. nov.*, type species *Thierryfreteyius thierryfreteyi sp. nov.* is a group generally encompassing species with a centre of distribution on the Iberian Peninsula and regions to the immediate south and north-east, including relevant to this paper, north-west Africa.

As a cohort of species, all diverged more than 10 MYA from their nearest named relatives. This includes all those species within what is left of *Podarcis* Wagler, 1830 *sensu lato.*

Five newly named species, all until now treated as being divergent populations of *T. vaucheri* (type locality Tanger, Northwest Africa) are within this paper formally named as follows: *Thierryfreteyius thierryfreteyi sp. nov.* from the south of the Iberian Peninsula, with a centre of distribution being Andalucia, Spain and pretty much of the same area.

Thierryfreteyius alainduboisi sp. nov. from the immediate vicinity of the hilly areas in and around Alcala la Real, Jaen Province, Spain. It is a divergent and yet range-restricted taxon.

Thierryfreteyius karimdaouesi sp. nov. from north-west Tunisia and immediately adjacent north-east Algeria.

Thierryfreteyius kheloufii sp. nov. known only from the immediate vicinity of Batna, north-east Algeria.

Thierryfreteyius mohamedmissoumi sp. nov. known only from the immediate vicinity of Azazga, Algeria. Hilly areas south of here are occupied by the type form of *T. vaucheri*.

The six relevant (above-named) species are separated from one another by the following unique combinations of characters:

T. vaucheri is separated from the other species by the

combination of average adult size 50 mm or more in snoutvent length, 61-73 midbody rows, 30 or less gular scales in a longitudinal series, 23-26 subdigital lamellae under the fourth toe.

T. vaucheri has small or tiny spots on the upper flank and larger ones below on the lower flank as well as a dominance of white or cream spotting or scales on the (original) tail, versus black.

T. thierryfreteyi sp. nov. is separated from the other species by the combination of an average adult size 48 mm or less in snoutvent length, 75-77 midbody rows, 31 or more gular scales in a longitudinal series, 27-29 subdigital lamellae under the fourth toe. *T. thierryfreteyi sp. nov.* is separated from *T. vaucheri* by having medium sized spots on the upper flank and larger ones below, versus small on the upper flank and larger below in *T. vaucheri. T. thierryfreteyi sp. nov.* has a dominance of black spotting or scales on the (original) tail, versus white or cream.

T. alainduboisi sp. nov. are readily separated from both *T. vaucheri* and *T. thierryfreteyi sp. nov.* by the presence of a strong reddish-brown rinse across the shoulder region and upper back. This same rinse is either absent or feint in the other two species. In both *T. vaucheri* and *T. thierryfreteyi sp. nov.* there are closely spaced light spots along the dorso-lateral edge forming lines. In some specimens, these merge to form complete lines.

In *T. alainduboisi sp. nov.* the same lines are well-defined and thick, with no obvious sign of being derived from dots or the merging of dots.

The three north east Algerian taxa (also entering Tunisia), being *T. karimdaouesi sp. nov.*, *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.*) are all easily separated as a group from the three above taxa from Morocco, north-east and central north Algeria and the south of Iberia (*T. vaucheri, T. thierryfreteyi sp. nov.* and *T. alainduboisi sp. nov.*) by the obvious absence of any well-defined line or stripe (either composed of close spots or as a line in some form) running along the dorsolateral edge. Instead, the dorsum colouration is continuous to the outer edge of the dorsolateral edge.

The three species *T. karimdaouesi sp. nov.*, *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.* have a well-defined black or blackish coloured band running along the upper third of the flank, which contrasts with the same band being usually poorly defined in the other three species, with the same band also occupying half the flank in *T. vaucheri, T. thierryfreteyi sp. nov.* and *T. alainduboisi sp. nov.*, rather than the far narrower top third only in the three north east Algerian taxa.

T. karimdaouesi sp. nov. is readily separated from *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.* by the fact that in breeding males, the dark of the upper flanks intrudes onto the dorsum, the result being significant reduced green colouration. In *T. karimdaouesi sp. nov.* the head is a similar colour to that of the greenish-body and there are large irregularly shaped black blotches on the head, especially posteriorly. In *T. karimdaouesi sp. nov.* the back forms large well defined paired patches, running paravertebrally. The dorsum is not greenish with numerous tiny dark flecks or spots.

Breeding males in both T. kheloufii sp. nov. and T.

mohamedmissoumi sp. nov. are readily separated from those of *T. karimdaouesi sp. nov.* by having light brown upper surfaces of the head, in stark contrast to the greenish dorsal surface of the body.

T. kheloufii sp. nov. is readily separated from both *T. karimdaouesi sp. nov.* and *T. mohamedmissoumi sp. nov.* in that breeding adult males have a green dorsum which has numerous tiny greyish-brown semi-distinct flecks all over it.

Breeding male *T. mohamedmissoumi sp. nov.* are somewhat intermediate in colour between *T. karimdaouesi sp. nov.* and *T. mohamedmissoumi sp. nov.* in that breeding adult males have a reduced amount of green on the dorsum and the dark colouration is not in the form of numerous tiny spots or flecks.

Instead, it is the form of semidistinct dark marbling (the areas



of dark being of moderate size), entirely on the dorsum and not entering or coming from the lateral edge or flanks (as is seen in *T. karimdaouesi sp. nov.*).

The original tail of adult *T. karimdaouesi sp. nov.* has prominent dark pigment on the top and sides, versus not so in *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.* The latter two species do have dark pigment on their original tails as adults, but this is faded and reduced in size and intensity.

Light green, yellow or white spots on the upper flanks of breeding adult male *T. mohamedmissoumi sp. nov.* are large and prominent, versus small to medium and not very bold in *T. kheloufii sp. nov.*

The upper flank of adult breeding male *T. karimdaouesi sp. nov.* is generally blackish in colour all over. However, where spotting would have been there is instead a barely discernible medium to dark brown smudging of pigment on the otherwise blackish surface.

The six preceding species, until now all treated as populations of *Podarcis vaucheri* Boettger, 1883 are separated from all other species within *Podarcis* Wagler, 1830 *sensu lato* by the following unique combination of characters:

Distinctive on a glance from the smallish body scales and the absence of a dark vertebral streak or series of spots, this latter feature only shared with *T. bocagei* (Lopez-Seoane, 1885) and some south-west Asian forms.

Head is fairly short, not more than 1.5 times as long as broad, and moderately depressed, its depth equalling the distance between the anterior corner of the eye and the tympanum.

(Note that in contrast *T. bocagei* (Lopez-Seoane, 1885) has a strongly depressed head, with its depth equalling the distance between the centre or the posterior border of the eye and the tympanum).

Hind limb reaches the shoulder in males, the elbow in females; foot is one and one sixth to one and one third times the length of the head.

Tail is one and two thirds to two times as long as the head and body.

Head-shields are typical as for all *Podarcis sensu lato* species, but parietals are shorter than usual,

usually barely longer than broad; the series of granules between the supraoculars and the superciliaries is complete, or first superciliary is in contact with the second supraocular; parietal in contact with the upper postocular; usually 4 upper labials anterior to the subocular, which is narrower beneath than above; masseteric shield present which may be divided into two or three.

Scales are finely granular, distinctly keeled, with 61 to 76 mid body rows; the 36 to 57 transverse series, in the middle of the back, correspond to the length of the head; 3 and 4 on the side correspond

to the ventral plate.

Ventral plates in 24 to 27 transverse series in males, 30 to 32 in females.

Preanal shield moderately large bordered by one or two semicircles of small shields.

Scales on upper surface of tibia a little smaller than dorsals. 13-20 femoral pores on each side.

23 to 28 lamellae under the fourth toe.

Caudal scales rather oblique, forming subequal whorls or alternately longer and shorter, upper moderately or strongly keeled, truncate or very obtusely pointed behind; 25 to 35 scales in the fourth or fifth whorl.

Olive-grey above, with small black spots or reticulations; a more or less defined dark lateral band, bordered above by a whitish streak or series of white spots; no dark vertebral streak or series of spots; limbs with round light, dark-edged spots; upper surface of head more or less spotted or marbled with black; two series of white, black-edged spots along each side of the tail. Belly white or pale orange, uniform or with a few scattered black dots; throat with black dots (modified from Boulenger 1920).

Images of *Thierryfreteyius thierryfreteyi sp. nov.* in life are depicted online at:

https://www.inaturalist.org/observations/13751111

photographed at Cadiz, Spain by Yeray Seminario on 24 June 2018,

and

https://www.inaturalist.org/observations/151583094 photographed at Cádiz, Spain by Yvonne Nielsen on 17 March 2023,

and

https://www.inaturalist.org/observations/41722746

photographed by Juan Manuel Palmero Sánchez at Cadiz, Spain on 14 March 2015, and

https://www.inaturalist.org/observations/68803857

photographed by Phil Benstead on 16 March 2016 at Benaoján, Málaga, Spain.

Images of *T. alainduboisi sp. nov.* are depicted in life online at: https://www.inaturalist.org/observations/262281244 (holotype depicted in this paper)

by Elyas Granero 17 February 2025 at Pegalajar, Jaén, Spain, Latitude 37.7406 N., Longitude -3.6458 W. (8 km east of Jaén city), and,

https://www.inaturalist.org/observations/71629215

photographed by Tom Hickey at Puente de la Sierra, Jaén, Spain on 20 March 2021,

and https://www.inaturalist.org/observations/66964643

photographed by Tom Hickey at Jaén, Spain on 23 December 2020,

and

https://www.inaturalist.org/observations/61558843

photographed by Luis González at La Guardia de Jaén, Spain on 3 October Oct 2020,

and

https://www.flickr.com/photos/50873760@N02/33236281548 photographed by Ray Hamilton near Alcala la Real, Jaen Province, Spain, on 15 February 2019,

and

https://www.flickr.com/photos/50873760@N02/31942862957/ photographed by Ray Hamilton near Alcala la Real, Jaen Province, Spain, on January 26, 2019.

Images of *T. karimdaouesi sp. nov.* are depicted in life online at: https://www.inaturalist.org/observations/217141768

photographed by Gintautas Steiblys at Aïn Draham, Tunisia on 12 May 2024, and

https://www.inaturalist.org/observations/231257907

photographed by Wouter Beukema at Aïn Draham, Tunesia on 14 May 2009,

and

https://www.inaturalist.org/observations/149281553

photographed by "probreviceps" at Ayn Darahim, Tunisia on 10 October 2004.

Images of *T. kheloufii sp. nov.* are depicted in life online at: https://www.inaturalist.org/observations/116524695 (holotype depicted in this paper)

photographed by Abdenour Kheloufi within 5 km of Batna, Algeria on 10 May 2022,

nd

https://www.inaturalist.org/observations/80743727

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photographed by Axel Castiel at Inoughissen, (30 km SE of Batna) Algeria on 28 May 2021.

Images of *T. mohamedmissoumi sp. nov.* are depicted in life online at:

https://www.inaturalist.org/observations/142127346 (holotype depicted in this paper)

photographed by Mohamed Missaum at Yakouren, Algeria (5 km east of Azazga, Algeria) on 22 July 2022, and

https://www.inaturalist.org/observations/119701269

photographed by Mohamed Missaum at Akerrou, Algeria (12 km northeast of Azazga, Algeria) on 25 April 2014, and

https://www.inaturalist.org/observations/134054787

photographed by Mohamed Missaum at Aghrib, Algeria (12 km north northeast of Azazga, Algeria) on 4 April 2014, and

https://www.inaturalist.org/observations/142127313

photographed by Mohamed Missaum at Akerrou, Algeria (12 km northeast of Azazga, Algeria) on 18 June 2014.

Distribution: *Thierryfreteyius kheloufii sp. nov.* is only known from the immediate vicinity of Batna, north-east Algeria. **Etymology:** *Thierryfreteyius kheloufii sp. nov.* is named

in honour of Dr. Abdenour Kheloufi, lecturer at Maître de Conférences (HDR), Department of Ecology and Environment, University of Batna, Algeria, Africa in recognition of his services to zoology and wildlife conservation.

THIERRYFRETEYIUS MOHAMEDMISSOURMI SP. NOV. LSIDurn:lsid:zoobank.org:act:A869DF46-A058-4040-A171-D30FC9FC67B1

Holotype: A live adult male specimen depicted in the image and shown within or adjacent to the text of this formal description, being on the top of page 47 in this paper and also seen in the same image at:

https://www.inaturalist.org/observations/142127346 (online as of 13 March 2025)

photographed by Mohamed Missaum at Yakouren, Algeria, Africa, Latitude 36.7346 N., Longitude 4.4390 E., (5 km east of Azazga, Algeria) on 22 July 2022.

Paratypes: 1/ A live immature specimen depicted in the image online at:

https://www.inaturalist.org/observations/119701269

photographed by Mohamed Missaum at Akerrou, Algeria, Africa, Latitude 36.8187 N., Longitude 4.4454 E. (12 km northeast of Azazga, Algeria) on 25 April 2014,

and 2/ two live specimens depicted in the image online at: https://www.inaturalist.org/observations/134054787

photographed by Mohamed Missaum at Aghrib, Algeria, Africa, Latitude 36.8066 N., Longitude 4.3200 E. (12 km north northeast of Azazga, Algeria) on 4 April 2014,

and 3/ a live adult male specimen depicted in the image online at:

https://www.inaturalist.org/observations/142127313 photographed by Mohamed Missaum at Akerrou, Algeria, Africa, Latitude 36.8187 N., Longitude 4.4454 E. (12 km northeast of

Azazga, Algeria) on 18 June 2014.

Diagnosis: The genus *Podarcis* Wagler, 1830 *sensu lato* has been divided into various genera and subgenera in this paper. Recognised herein are *Podarcis* Wagler, 1830 (type species: *Seps muralis* Laurenti, 1768) and *Phenax* Fitzinger, 1843 (type species: *Lacerta taurica* Pallas, 1814), being resurrected from synonymy as an available name. The genus *Thierryfreteyius gen. nov.*, type species *Thierryfreteyius thierryfreteyi sp. nov.* is a group generally encompassing species with a centre of distribution on the Iberian Peninsula and regions to the immediate south and north-east, including relevant to this paper, north-west Africa.

As a cohort of species, all diverged more than 10 MYA from their nearest named relatives. This includes all those species within what is left of *Podarcis* Wagler, 1830 *sensu lato*.

Five newly named species, all until now treated as being divergent populations of *T. vaucheri* (type locality Tanger, Northwest Africa) are within this paper formally named as follows:

Thierryfreteyius thierryfreteyi sp. nov. from the south of the Iberian Peninsula, with a centre of distribution being Andalucia, Spain and pretty much of the same area.

Thierryfreteyius alainduboisi sp. nov. from the immediate vicinity of the hilly areas in and around Alcala la Real, Jaen Province, Spain. It is a divergent and yet range-restricted taxon.

Thierryfreteyius karimdaouesi sp. nov. from north-west Tunisia and immediately adjacent north-east Algeria.

Thierryfreteyius kheloufii sp. nov. known only from the immediate vicinity of Batna, north-east Algeria.

Thierryfreteyius mohamedmissoumi sp. nov. known only from the immediate vicinity of Azazga, Algeria. Hilly areas south of here are occupied by the type form of *T. vaucheri*.

The six relevant (above-named) species are separated from one another by the following unique combinations of characters:

T. vaucheri is separated from the other species by the combination of average adult size 50 mm or more in snoutvent length, 61-73 midbody rows, 30 or less gular scales in a longitudinal series, 23-26 subdigital lamellae under the fourth toe.

T. vaucheri has small or tiny spots on the upper flank and larger ones below on the lower flank as well as a dominance of white or cream spotting or scales on the (original) tail, versus black.

T. thierryfreteyi sp. nov. is separated from the other species by the combination of an average adult size 48 mm or less in snoutvent length, 75-77 midbody rows, 31 or more gular scales in a longitudinal series, 27-29 subdigital lamellae under the fourth toe.

T. thierryfreteyi sp. nov. is separated from *T. vaucheri* by having medium sized spots on the upper flank and larger ones below, versus small on the upper flank and larger below in *T. vaucheri*.

T. thierryfreteyi sp. nov. has a dominance of black spotting or scales on the (original) tail, versus white or cream.

T. alainduboisi sp. nov. are readily separated from both *T. vaucheri* and *T. thierryfreteyi sp. nov.* by the presence of a strong reddish-brown rinse across the shoulder region and upper back. This same rinse is either absent or feint in the other two species. In both *T. vaucheri* and *T. thierryfreteyi sp. nov.* there are closely spaced light spots along the dorso-lateral edge forming lines. In some specimens, these merge to form complete lines.

In *T. alainduboisi sp. nov.* the same lines are well-defined and thick, with no obvious sign of being derived from dots or the merging of dots.

The three north east Algerian taxa (also entering Tunisia), being *T. karimdaouesi sp. nov.*, *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.*) are all easily separated as a group from the three above taxa from Morocco, north-east and central north Algeria and the south of Iberia (*T. vaucheri, T. thierryfreteyi sp. nov.* and *T. alainduboisi sp. nov.*) by the obvious absence of any well-defined line or stripe (either composed of close spots or as a line in some form) running along the dorsolateral edge. Instead, the dorsum colouration is continuous to the outer edge of the dorsolateral edge.

The three species *T. karimdaouesi sp. nov.*, *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.* have a well-defined black or blackish coloured band running along the upper third of the flank, which contrasts with the same band being usually poorly defined in the other three species, with the same band also occupying half the flank in *T. vaucheri, T. thierryfreteyi sp. nov.* and *T. alainduboisi sp. nov.*, rather than the far narrower top third only in the three north east Algerian taxa.

T. karimdaouesi sp. nov. is readily separated from *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.* by the fact that in breeding males, the dark of the upper flanks intrudes onto the dorsum, the result being significant reduced green colouration. In *T. karimdaouesi sp. nov.* the head is a similar colour to that of the greenish-body and there are large irregularly shaped black blotches on the head, especially posteriorly. In *T. karimdaouesi sp. nov.* the dark on the back forms large well defined paired patches, running paravertebrally. The dorsum is not greenish with numerous tiny dark flecks or spots.

Breeding males in both *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.* are readily separated from those of *T. karimdaouesi sp. nov.* by having light brown upper surfaces of the head, in stark contrast to the greenish dorsal surface of the body.

T. kheloufii sp. nov. is readily separated from both *T. karimdaouesi sp. nov.* and *T. mohamedmissoumi sp. nov.* in that breeding adult males have a green dorsum which has numerous tiny greyish-brown semi-distinct flecks all over it.

Breeding male *T. mohamedmissoumi sp. nov.* are somewhat intermediate in colour between *T. karimdaouesi sp. nov.* and *T. mohamedmissoumi sp. nov.* in that breeding adult males have a reduced amount of green on the dorsum and the dark colouration is not in the form of numerous tiny spots or flecks.

Instead, it is the form of semidistinct dark marbling (the areas of dark being of moderate size), entirely on the dorsum and not entering or coming from the lateral edge or flanks (as is seen in *T. karimdaouesi sp. nov.*).

The original tail of adult *T. karimdaouesi sp. nov.* has prominent dark pigment on the top and sides, versus not so in *T. kheloufii sp. nov.* and *T. mohamedmissoumi sp. nov.* The latter two species do have dark pigment on their original tails as adults, but this is faded and reduced in size and intensity.

Light green, yellow or white spots on the upper flanks of breeding adult male *T. mohamedmissoumi sp. nov.* are large and prominent, versus small to medium and not very bold in *T. kheloufii sp. nov.*

The upper flank of adult breeding male *T. karimdaouesi sp. nov.* is generally blackish in colour all over. However, where spotting would have been there is instead a barely discernible medium to dark brown smudging of pigment on the otherwise blackish surface.

The six preceding species, until now all treated as populations of *Podarcis vaucheri* Boettger, 1883 are separated from all other species within *Podarcis* Wagler, 1830 *sensu lato* by the following unique combination of characters:

Distinctive on a glance from the smallish body scales and the absence of a dark vertebral streak or series of spots, this latter feature only shared with *T. bocagei* (Lopez-Seoane, 1885) and some south-west Asian forms.

Head is fairly short, not more than 1.5 times as long as broad, and moderately depressed, its depth equalling the distance between the anterior corner of the eye and the tympanum.

(Note that in contrast *T. bocagei* (Lopez-Seoane, 1885) has a strongly depressed head, with its depth equalling the distance between the centre or the posterior border of the eye and the tympanum).

Hind limb reaches the shoulder in males, the elbow in females;





foot is one and one sixth to one and one third times the length of the head.

Tail is one and two thirds to two times as long as the head and body.

Head-shields are typical as for all *Podarcis sensu lato* species, but parietals are shorter than usual,

usually barely longer than broad; the series of granules between the supraoculars and the superciliaries is complete, or first superciliary is in contact with the second supraocular; parietal in contact with the upper postocular; usually 4 upper labials anterior to the subocular, which is narrower beneath than above; masseteric shield present which may be divided into two or three. Scales are finely granular, distinctly keeled, with 61 to 76 mid

body rows; the 36 to 57 transverse series, in the middle of the back, correspond to the length of the head; 3 and 4 on the side correspond

to the ventral plate.

Ventral plates in 24 to 27 transverse series in males, 30 to 32 in females.

Preanal shield moderately large bordered by one or two semicircles of small shields.

Scales on upper surface of tibia a little smaller than dorsals. 13-20 femoral pores on each side.

23 to 28 lamellae under the fourth toe.

Caudal scales rather oblique, forming subequal whorls or alternately longer and shorter, upper moderately or strongly keeled, truncate or very obtusely pointed behind; 25 to 35 scales in the fourth or fifth whorl.

Olive-grey above, with small black spots or reticulations; a more or less defined dark lateral band, bordered above by a whitish streak or series of white spots; no dark vertebral streak or series of spots; limbs with round light, dark-edged spots; upper surface of head more or less spotted or marbled with black; two series of white, black-edged spots along each side of the tail. Belly white or pale orange, uniform or with a few scattered black dots; throat with black dots (modified from Boulenger 1920).

Images of *Thierryfreteyius thierryfreteyi sp. nov.* in life are depicted online at:

https://www.inaturalist.org/observations/13751111

photographed at Cadiz, Spain by Yeray Seminario on 24 June 2018,



https://www.inaturalist.org/observations/151583094 photographed at Cádiz, Spain by Yvonne Nielsen on 17 March https://www.inaturalist.org/observations/41722746 photographed by Juan Manuel Palmero Sánchez at Cadiz, Spain on 14 March 2015, https://www.inaturalist.org/observations/68803857 photographed by Phil Benstead on 16 March 2016 at Benaoján,

Málaga, Spain. Images of T. alainduboisi sp. nov. are depicted in life online at: https://www.inaturalist.org/observations/262281244 (holotype depicted in this paper)

by Elyas Granero 17 February 2025 at Pegalajar, Jaén, Spain, Latitude 37.7406 N., Longitude -3.6458 W. (8 km east of Jaén city), and

https://www.inaturalist.org/observations/71629215

photographed by Tom Hickey at Puente de la Sierra, Jaén, Spain on 20 March 2021,

and

https://www.inaturalist.org/observations/66964643

photographed by Tom Hickey at Jaén, Spain on 23 December 2020,

and

https://www.inaturalist.org/observations/61558843

photographed by Luis González at La Guardia de Jaén, Spain on 3 October Oct 2020.

and

https://www.flickr.com/photos/50873760@N02/33236281548 photographed by Ray Hamilton near Alcala la Real, Jaen Province, Spain, on 15 February 2019,

and

https://www.flickr.com/photos/50873760@N02/31942862957/ photographed by Ray Hamilton near Alcala la Real, Jaen Province, Spain, on January 26, 2019.

Images of T. karimdaouesi sp. nov. are depicted in life online at: https://www.inaturalist.org/observations/217141768

photographed by Gintautas Steiblys at Aïn Draham, Tunisia on 12 May 2024,

and

https://www.inaturalist.org/observations/231257907

photographed by Wouter Beukema at Aïn Draham, Tunesia on 14 May 2009,

and

https://www.inaturalist.org/observations/149281553

photographed by "probreviceps" at Ayn Darahim, Tunisia on 10 October 2004.

Images of T. kheloufii sp. nov. are depicted in life online at: https://www.inaturalist.org/observations/116524695 (holotype depicted in this paper) photographed by Abdenour Kheloufi within 5 km of Batna, Algeria on 10 May 2022,

and

https://www.inaturalist.org/observations/80743727 photographed by Axel Castiel at Inoughissen, (30 km SE of Batna) Algeria on 28 May 2021.

Images of T. mohamedmissoumi sp. nov. are depicted in life online at:

https://www.inaturalist.org/observations/142127346 (holotype depicted in this paper)

photographed by Mohamed Missaum at Yakouren, Algeria (5 km east of Azazga, Algeria) on 22 July 2022,

and

https://www.inaturalist.org/observations/119701269 photographed by Mohamed Missaum at Akerrou, Algeria (12 km northeast of Azazga, Algeria) on 25 April 2014, and

https://www.inaturalist.org/observations/134054787

photographed by Mohamed Missaum at Aghrib, Algeria (12 km north northeast of Azazga, Algeria) on 4 April 2014, and

https://www.inaturalist.org/observations/142127313

photographed by Mohamed Missaum at Akerrou, Algeria (12 km northeast of Azazga, Algeria) on 18 June 2014.

Distribution: Thierryfreteyius mohamedmissoumi sp. nov. is known only from the immediate vicinity of Azazga, Algeria. Hilly areas south of here are occupied by the type form of T. vaucheri.

Etymology: Thierryfreteyius mohamedmissoumi sp. nov. is named in honour of Mohamed Missoum an Algerian Naturalist associated with the Algerian Wildlife Watching Association for services to science and conservation.

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CONFLICTS OF INTEREST

SPECIES LIST WITHIN THE ASSEMBLAGE OF PODARCIS WAGLER, 1830 SENSU LATO.

(A number of species identified herein are actually species complexes)

HELLASSAURUS GEN. NOV.

Hellassaurus peloponnesiaca (Bibron and Bory de Saint-Vincent, 1833) (type species)

H. cretensis (Wettstein, 1952)

H. erhardii (Bedraiga, 1882)

H. levendis (Lymberakis, Poulakakis, Kaliontzopoulou, Valakos and Mylonas, 2008)

H. thais (Buchholz, 1960)

HOSERSAUREEA GEN. NOV.

Hosersaureea liifordi (Günther, 1874) (type species) H. pityusensis (Bosca, 1883)

SARDINIACORSICAENSIS SUBGEN. NOV.

Hosersaureea (Sardiniacorsicaensis) tiliguerta (Gmelin in

Linnaeus, 1789) (type species)

H. (Sardiniacorsicaensis) contii (Lanza and Brizzi, 1977)

PHENAX FITZINGER, 1843

Phenax tauricus (Georgi, 1801) (type species)

P. gaigeae (Werner, 1930)

- P. ionicus (Lehrs, 1902)
- P. melisellensis (Braun, 1877)
- P. milensis (Bedraiga, 1882)

PODARCIS WAGLER, 1830

Podarcis muralis (Laurenti, 1768) (type species) (a complex of an estimated 5-7 species)

THIERRYFRETEYIUS GEN. NOV.

Thierryfreteyius thierryfreteyi sp. nov.. (type species)

- T. alainduboisi sp. nov.
- T. atratus (Bosca, 1916)
- *T. bocagei* (Lopez-Seoane, 1885)
- T. carbonelli (Perez-Mellado, 1981)
- *T. guadarramae* (Bosca, 1916)
- T. hispanicus (Steindachner, 1870)
- T. karimdaouesi sp. nov.
- T. kheloufii sp. nov.
- T. liolepis (Boulenger, 1905)

T. lusitanicus (Geniez, Sa-Souza, Guillaume, Cluchier and Crochet, 2014)

- T. mohamedmissoumi sp. nov.
- T. vaucheri (Boulenger, 1905)

T. virescens (Geniez, Sa-Souza, Guillaume, Cluchier and Crochet, 2014)

WELLINGTONLACERTA GEN. NOV.

Wellingtonlacerta waglerianus (Gistel, 1868) (type species) *W. filfolensis* (Bedraiga, 1876)

W. raffonei (Mertens, 1952)

WELLSLACERTA GEN. NOV.

Wellslacerta siculus (Rafinesque-Schmaltz, 1810) (type species) *W. latastei* (Bedraiga, 1879)