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Comments about the Gachet's (1834) paper: "*Notice sur le* Lezard de Schreibers (lacerta Schreibersiana Milne-Edwards" and the status of its varieties "fusca" and "lutea" in relation to *Zootoca vivipara louislantzi* Arribas, 1999

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RESUM

El nom "*lacerta Schreibersiana* var B *Lutea* Gachet, 1832" oblidat durant gairebé dos segles, podria posar en perill la prioritat del nom de *Zootoca vivipara louislantzi* Arribas, 2009 descrita fa 10 anys. En aquest article, argumentem que hi ha diverses raons per descartar "lutea" com a nom vàlid. D'una banda, hi ha una notable contradicció que podria posar en dubte la espècie concernida (les dents tricúspides no estan presents a *Z. vivipara*). Encara que sigui *Z. vivipara*, també hi ha una incertesa sobre la subespècie en qüestió (el riu Garona és el límit teòric que separa les formes ovípara i vivípara i, tot i que i son més a prop les ovípares, cap d'elles es troba avui prop de Bordeus). Per això, "Lutea" hauria de ser considerat un *nomen dubium*. A més, i en paraules del seu propi autor, es va erigir com una varietat de color per alguns individus, essent de tal manera un nom infraespecífic. Per totes aquestes raons, i en cas que encara es pugui seguir discutint algun d'aquests aspectes, proposem aquí la reversió de la precedència, ja que el nom "Lutea" mai no s'ha utilitzat com a vàlid en els darrers 187 anys, i el nom *louislantzi* té més de 10 anys i ha estat utilitzat com a vàlid en almenys 37 obres i per 70 autors diferents (vegeu l'apèndix 1; el mínim requerit per l'ICZN és de 10 anys, 25 obres i 10 autors). Per aquest motiu, es declara *louislantzi* com *nomen protectum* i "Lutea" com *nomen oblitum*.

PARAULES CLAU: Nomenclatura zoològica; reversió de la prioritat; *nomen protectum*; *nomen oblitum*.

ABSTRACT

The name *"lacerta Schreibersiana* var B *Lutea Gachet, 1832"* forgotten during near two centuries, could endanger the name of *Zootoca vivipara louislantzi* Arribas, 2009, described 10 years ago. In the present article, we argue that there are several reasons to rule out "lutea" as a valid name. On the one hand, there is a remarkable contradiction that could make one doubt about the species concerned (the tricuspid teeth, never are present in *Z. vivipara*). Even if being *Z. vivipara*, there is an uncertainty also regarding the subspecies concerned (the Garona river is the theoretical limit that separates both oviparous and viviparous forms, and although oviparous is closer, none lives today in the vicinity of Bordeaux). That's why "*Lutea"*should be a *nomen dubium*. In addition, and in words of its own author, it was erected as a variety of color in some individuals, so it is an infrasubspecific name. For all these reasons, and in case any of these aspects could still be further discussed, we propose here the reversal of precedence, since the name "*Lutea*" has never been used as valid in the last 187 years, and the name *louislantzi* has more than 10 years and has been used as valid in at least 37 works and by 70 different authors (see Appendix 1; the minimum required by the ICZN is 10 years, 25 works and 10 authors). For this reason it is declared *louislantzi* as *nomen protectum* and "Lutea" *nomen oblitum*.

KEY WORDS: Zoological Nomenclature; reversal of precedence; *nomen protectum; nomen oblitum*.

RESUMEN

El nombre "*lacerta Schreibersiana* var B *Lutea* Gachet, 1832", olvidado durante casi dos siglos, podría poner en peligro el nombre de *Zootoca vivipara louislantzi* Arribas, 2009, descrito hace 10 años. En el presente artículo, argumentamos que hay varias razones para descartar "lutea" como un nombre válido. Por un lado, hay una notable contradicción que hace dudar de la especie en cuestión (los dientes tricúspides, nunca están presentes en *Z. vivipara*). Incluso si se trata de *Z. vivipara*, también existe una incertidumbre con respecto a la subespecie en cuestión (el río Garona es el límite teórico que separa las formas ovípara y vivípara, y aunque la ovípara está hoy en día más cerca, ninguna vive hoy en las cercanías de Burdeos). Es por eso que "Lutea" debería ser un *nomen dubium*. Además, y en palabras de su propio autor, se erigió como una variedad de color en algunos individuos, por lo que es un nombre infrasubespecífico. Por todas estas razones, y por si acaso alguno de estos aspectos aún pudiera ser discutido, proponemos aquí la reversión de la prioridad, ya que el nombre "Lutea" nunca se ha utilizado como válido en los últimos 187 años, y el nombre *louislantzi* tiene más de 10 años y se ha utilizado como válido en al menos 37 trabajos y por 70 autores diferentes (ver Apéndice 1; el mínimo requerido por el ICZN es de 10 años, 25 trabajos y 10 autores). Por esta razón, se declara *louislantzi* como *nomen protectum* y "Lutea" *nomen oblitum*.

PALABRAS CLAVE: Nomenclatura zoológica; reversión de la prioridad; *nomen protectum; nomen oblitum*.

A few years ago, SCHMIDTLER & BÖHME (2011) reviewed the historical synonymies of *Zootoca vivipara* and its different forms, recalling attention, among multiple questions, upon two names that had passed unnoticed until that moment. They referred to paper by GACHET (1832) where two "varieties" of presumably *Zootoca vivipara* were named: var A. fusca –the normal colored one-; and var. B. lutea, for yellow bellied specimens. Although no more comments have been published about these two old names (187 years old in 2019), they have been recently mentioned by SPEYBROEK et al. (2016) and INEICH & DORONIN (2017) as possible older names available for *Zootoca vivipara louislantzi* Arribas, 2009. Circumstances for "var. A fusca" are the same as for "var B. lutea", but the latter is invalid as is a younger homonym of *Lacerta fusca* Daudin 1802 (nomen substitutum pro *Seps terrestris* Laurenti 1768 = *Lacerta viridis viridis* Laurenti) (SCHMIDTLER & BÖHME, 2011).

In this note, the identity of the Gachet's names and their inconsistencies are analyzed, proposing their definitive rejection.

Gachet's paper deals mainly with what *a priori* seems to be *Zootoca vivipara* (under the name *Lacerta schreibersiana*). Gachet's text combines his own observations with Dugès and Milne-Edwards published descriptions of the species *L. schreibersiana* that, in parts, transcribes literally in his own paper (i. e. "*…calquée sur celles que M Duges a données …*" in words of the own Gachet). However, the identity of the species, subspecies mentioned by Gachet and the homogeneity of Gachet's samples is not so clear.

- **Incongruences with *Zootoca vivipara* identification**

Point 1.- Among the characters highlighted in Gachet's work were **the presence of tricuspid teeth ("dents trifides"), that he stresses that had passed unnoticed to Milne-Edwards** (and to Duges as well, who said that he was not aware of this character until after he saw his work printed). "*Les dents sont trifides, ainsi que l'a constaté d'abord M. Dugès. Voici ce que me disait ce savant naturaliste dans la lettre qu'il eut la complaissance de m'écrire, relativement à cette espèce dont je lui avais envoyé plusiers individus, en le priant de les examiner: Mais un caràctere important que M. Edwards n'a pas connu et que je n'ai constaté que depuis l'impression de mon trevail, c'est que le L. de Schreibers a les dents trifides comme l'ocellé,*

ce qui le distingue nettement du L. stirpium, du L. muralis, etc., etc. ".
In fact, ***Zootoca vivipara*** **never has tricuspid teeth** (also absent in *Podarcis muralis* and *Lacerta bilineata*, common species in the same area). *Zootoca vivipara* has unicuspid and bicuspid teeth ("*majority of teeth monocuspid rather than bicuspid in juveniles and almost the same numbers of both in adults*" following BARAHONA & BARBADILLO, 1997 and the author's own data). It is interesting to notice that the only species with tricuspid teeth in Western Europe are *Lacerta schreiberi* and *Timon lepidus.*

Point 2.- Concerning the "var. B lutea" (two specimens), the description could correspond to *Z. vivipara* (a normal male of the oviparous or the viviparous forms, by the yellow underside colour with black dotted scales). Alternatively, again it is important to notice that *L. schreiberi* with yellow spotted underside and less *Timon lepidus* with greenish unspotted underside could fit the description.

- Doubts about the *Zootoca vivipara* subspecies concerned

Point 3.- Considering that Gachet's description referred to *Z. vivipara*, did the specimens correspond to the oviparous or to the viviparous forms?. The Garonne River is the northern theoretical limit of the oviparous form of *Z. vivipara*. Bordeaux is in the lower curse of the Garonne River. Currently, the oviparous populations of *Z. vivipara* are closer to Bordeaux than the viviparous ones, so if Gachet's description indeed referred to *Zootoca vivipara*, most probaby it would correspond to *Z. v. louislantzi* (oviparous), by geographical proximity and ecology. The fact, Gachet's locality is marginal to the distribution areas of the oviparous and viviparous forms (from the surroundings of Bordeaux without specifying if it was north or south of the Garonne river). Currently, none of the two forms live near the area. Unfortunately, what was the situation nearly two centuries ago is unknown.

- Infrasubspecific names?

Point 4.- Independently of what has been pointed above, it becomes clear that GACHET (1832) referred to individual variation (therefore, infrasubespecific in the sense of the current Code; ICZN 1999 and updates) as he mentions: "*...D'après cette description on voit que plusiers des caractères que m'a offert la varieté b.*[lutea] *du Lézard de Schreibers, doivent être considérés comme individuels, et quelques uns peut-être comme dependants de l'age...*" and adds "*...Aussi n'est-ce point sur eux que j'établis cette variété , mais seulement sur le coleur différente de la face inferieure du cops, et sur le nombre et la disposition des taches que portent les lamelles*(*). *Cependant ces caràctères ne seraient pas suffisants pour établir une varieté, si on ne recontrait pas en plus grand nombre les lézards qui les portent, ou si l'on observait des nuances intermédiaires à ces deux varietés*".[(*)= refers to the pattern and colouration of the ventral plates].

DISCUSSION

It is difficult to accept the *Zootoca* identification with tricuspid teeth. Moreover, different taxa could be involved, and not only by the teeth morphology observations. GACHET (1832) mentions that Duges identified his specimens ("*...que nous rencontrions en abondance dans certaines localites des environs de Bordeaux.*"), but also from the surroundings of Montpellier (where *Z. vivipara* is absent!). As mentioned above, the general description of *L. schreibersiana* from GACHET (1832) is a mixture of his own observations with Dugès and Milne-Edwards' descriptions of the species (i. e. "*...calquée sur celles que M Duges a données ...*").

It is curious also Gachet's "surprise" by the presence of yellow underside with black spotting of the two specimens –almost one not captured by him- of his "var. B lutea", that he considers strikingly different. In fact, in *Z. vivipara* half of the adult specimens (all the males), have yellow underside with black spots!. This highlights a scarce knowledge of the species' morphology, which contrasts with a detailed description of its habitat.

In summary, we agree in that the main text of GACHET (1832) deals with *Z. vivipara*. However, a large part is copied from other authors and not based on direct observations and analyses by the author. From the original paper by

GACHET (1832), the tooth morphology does not correspond to *Z. vivipara*, and appears in *L. schreiberi* (males and partly juveniles are also yellow with black spotting underside) or *Timon lepidus* (not spotted, but present in the surroundings of Montpellier-see above Duges identification-). This does not necessarily means that *L. schreiberi* had a greater distribution area in the past (a locality confusion is also possible), although today, from Cantabria in Spain until the same French frontier -Hondarribia= Fuenterrabia (Guipuzcoa)-, is present in form of residual populations in marshy areas, coastal sand dunes, etc. The brownish specimen depicted in Bea's book "Anfibios y Reptiles de Guipuzcoa" (BEA, 1982) is from Fuenterrabia, just in the French border. From the "var. B lutea" specimens studied by GACHET (1832), more specifically the two described specimens, one was donated by Mr. Laporte, and the other is not specified (perhaps, but not sure, collected by Gachet himself).

Currently, there are neither oviparous nor viviparous populations of *Z. vivipara* in the surroundings of Bordeaux. To resurrect a name nearly 200 years old that has never been used before, we must have EVIDENCES, not SUPPOSITIONS ("possible was vivipara" "perhaps was South of the Garonne river" "possibly was the oviparous form"). Without forget that the tricuspid teeth exclude totally *Zootoca vivipara*. But even more, the name "lutea" is coined for a colour variety, named as a mere colour deviation (in this case all the living males, but just as aberrations and other individual forms considered as infrasub-especific).

CONCLUSIONS

According to **points 1 and 2** above, "Lutea" can be considered a ***nomen dubium*** either for the species concerned (*Z. vivipara* or other with tricuspid teeth?) as well as (**point 3**) for the subespecies (the viviparous [*oedura* ?–or the name corresponding to the French populations belonging to the "Western European viviparous clade"-] or the oviparous *louislantzi*), as we have no evidence of which one inhabited the concerned area.

Moreover, according to **point 4**, the names can be considered **infrasubespecific**, as were described considering them as simply color varieties by their author, and therefore not valid in accordance with Art. 10.2 and 45.6.4 of the Code. Both names of varieties are from 1832 – before 1961-, but cannot be considered as subspecific, as the author revealed that he considered them as simple color varieties [Art. 45.6.4 "***the content of the work unambiguously reveals that the name was proposed for an infrasubspecific entity]*** (…) and lutea has never been used as valid [Art. 45.6.4.1.]. GACHET (1834) considered that was individual variation **(point 4)** "…*D'après cette description on voit que plusiers des caractères que m'a offert la varieté b. du Lézard de Schreibers, doivent être considérés comme individuels, et quelques uns peut-être comme dependants de l'age*…" the name "lutea" shall be considered as infra-subespecific, and therefore it is unavailable.

Even in the case of being available, the reversion of the priority of *Z. v. louislantzi* Arribas, 1999 over the name "lutea" near two centuries old but unused (LATASTE [1933] mentions the Gachet's paper, but without using the names of the varieties), is desirable in base to the Article 23.9. Lutea has not been used as a valid name after 1899 [Art 23.9.1.1], and louislantzi has been used as its presumed valid name, in at least 25 works, published by at least 10 authors in the immediately preceding 50 years and encompassing a span of not less than 10 years [Art 23.9.1.2].

As the original description of *Z. vivipara louislantzi* accomplishes ten years (date of publication: "30 Jänner 2009"[30th January 2009]) the minimum required by ICZN, and to avoid interpretations or doubts about if "lutea" is a *nomen dubium* (points 1, 2 and 3) or a infrasubespecific and therefore unavailable (point 4), here we declare [Art. 23.9.2]:

Zootoca vivipara louislantzi Arribas, 1999 ***nomen protectum*** , and *Lacerta Schreibersiana* var. B. *Lutea* Gachet, 1834, ***nomen oblitum***.

Conditions of both articles 23.9.1.1. and 23.9.1.2 are met (see Appendix 1). The list contains 37 published works (25 is the minimum) along 10 years (the minimum required) by 70 authors (at least 10 required) that use the name *louislantzi* as valid.

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APPENDIX 1

List containing 37 published works (by 70 different authors) that use the name *louislantzi* as valid during the last 10 years.

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