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Comments on the proposed conservation of usage of *Testudo gigantea* Schweigger, 1812 (currently *Geochelone (Aldabrachelys) gigantea* (Reptilia, Testudines)
(Case 3463; see *BNZ* **66**: 34–50, 80–87, 169–186, 274–290, 352–357; **67**: 71–90)

(1) Nancy FitzSimmons

Institute for Applied Ecology, Faculty of Applied Science, University of Canberra, Canberra, ACT 2601, Australia
(e-mail: nancy.fitzsimmons@canberra.edu.au)

I am writing in support of Case 3463 to stabilise the name of the Aldabra tortoise. My field of study is conservation genetics, particularly of turtles, so the issues with the nomenclature of the Aldabra tortoise are something I have been aware of. I have read the various arguments put forth on this case and would like to join with those who support the case. We have similar problems with the naming of many species in Australia and so are very aware of the problems caused by having an ever changing background of names to deal with. I hope that you will listen to the strong views in support of this case from the many people who have worked very closely with the species.

(2) Peter Havaš

Titogradská 18, 040 23 Košice, Slovak Republic
(e-mail: peter.havas@seznam.cz)

A chance to painlessly resolve the problem of the scientific name of the giant land tortoise inhabiting the island of Aldabra and the Granitic Seychelles was frittered

away in the 1980s, when conflicting opinions about it were published in several papers dealing with the geography, taxonomy, phylogeny and nomenclature of giant tortoises of the western Indian Ocean (Bour, 1982; 1984a; 1984b; 1985; 1988; Crumly, 1986; Pritchard, 1986). Three of these papers (Bour, 1984a; Crumly, 1986; Pritchard, 1986) and partially also Bour's (1982) paper, addressed the identity of *Testudo gigantea* Schweigger, 1812, a nominal species whose name has been well established for the tortoise native to Aldabra island since 1881 (Frazier, 2006; BZN 66: 34–50). Although all three authors of these papers are considered to be experts in testudinid taxonomy, their study, analysis and interpretation of Schweigger's original texts describing his new species named *Testudo gigantea* led to three fairly different conclusions concerning the species' identity. As a consequence of their findings, both Bour (1982; 1984a) and Pritchard (1986) declared that the name *Testudo gigantea* Schweigger, 1812 should not be assigned to the Aldabra tortoise and that the name *Testudo elephantina* Duméril & Bibron, 1835 had to be applied to this species. This action, together with the erecting of the new genus name *Dipsochelys* by Bour (1982) and the revival of the forgotten species name *Testudo dussumieri* Gray, 1831 by Gerlach & Canning (1996), was the starting point of a continuing hustle of nomenclatural changes at both genus and species level, ending up in a flood of various, sometimes grotesque and absurd binominal combinations (see Fritz & Havaš, 2007). Hence, Frazier's designation of a neotype for *Testudo gigantea* Schweigger, 1812 in 2006 was a logical step towards normalisation of this situation.

Taking into account its object to support stability of names, the Code provides effective rules and tools to allow the conservation of long established names in their current usage, including in cases where the present taxonomic concept is different from the original concept when the name was established. We give just two examples to illustrate the effectiveness of these tools. Firstly, Wallin (1977) demonstrated that the type specimen used by Linnaeus for his description of *Testudo geometrica* was in reality an individual of *Geochelone elegans* (Schoepff, 1795). In order to conserve the long used scientific name for the Geometric Tortoise in its current sense and to prevent subsequent nomenclatural confusion, Hoogmoed & Crumly (1984), using Article 73 (c) (i) of the Code (1964), designated a lectotype for this nominal species. Secondly, Bour & Maran (1999) suggested that the young specimen used by Linnaeus to define his concept of *Testudo orbicularis* Linnaeus, 1758, was an individual of *Mauremys leprosa* (Schoepff, 1812). Nevertheless, they accepted a verdict that 'Toutefois, nous n'allons pas modifier une situation nomenclaturale stabilisée depuis plus de 120 ans . . .'. ['However we are not going to modify a nomenclatural situation stabilised for over 120 years . . .']. However, they overlooked the fact that this matter had been explained in detail several years previously (Fritz, 1992) and had been definitively resolved two years later by designation of a neotype for *Testudo orbicularis* Linnaeus, 1758 using Article 75 of the Code (1985) (Fritz, 1994). Despite the fact that the identity of *Testudo orbicularis* Linnaeus, 1758 has been quite clear since 1994, Bour (2009) revived this case again. He concluded from the original description by Linnaeus (1758) that *Testudo orbicularis* was based on a specimen of *Mauremys leprosa*. Bour evidently ignored the existence of a name-bearing type (by neotype designation) for *Testudo orbicularis* Linnaeus, 1758, but he expressed very clearly the attitude 'I do not wish to run counter to the stability of nomenclature'. So,

despite his confidence that both original type specimen and description used by Linnaeus did not fit the present taxonomic concept of *Emys orbicularis*, Bour advocated stability of nomenclature.

Were all nomenclatural changes inevitable?

The above-mentioned two examples show the efforts of all authors involved to conserve a long used scientific name, fully in harmony with the text of the Code. Is *Testudo gigantea* Schweigger, 1812 a similar case? At that time when three different opinions about the identity of *Testudo gigantea* appeared, three certainties became clear: (1) The interpretation of Schweigger's description was ambiguous; (2) the type specimen of *Testudo gigantea* was lost or unidentifiable; and (3) *Testudo gigantea* Schweigger, 1812 was the well-established scientific name for the Aldabra tortoise (Bour, 1984a; Crumly, 1986; Pritchard, 1986). Even if one considered that Bour and Pritchard are right and that Schweigger's description does not match the Aldabra tortoise, one cannot agree with their opinion that Schweigger's name should not be applied to this species. Taking into account the above-mentioned three certainties, the spirit of the Code (stability) and the rules provided to sort out such matters, the application of Article 75 of the Code (1964, 1985) and the designation of a neotype would have been the most appropriate actions for protection of the scientific name of such a popular and fascinating creature as the Aldabra tortoise. However, this did not happen and the species name *Testudo elephantina* Duméril & Bibron, 1835 was revived and a new genus name *Dipsochelys* Bour, 1982 was proposed for this species.

Treated as generically distinct since 1978, three genus names for the Aldabra tortoise and its relatives have been applied: *Megalochelys* Fitzinger, 1843 (Obst, 1978), *Aldabrachelys* Loveridge & Williams, 1957 (Bour, 1979) and *Dipsochelys* Bour, 1982 (Bour, 1982). Whereas rejection of the Fitzinger's name *Megalochelys* has been nomenclaturally fully justified (*Megalochelys* Fitzinger, 1843 is junior homonym of *Megalochelys* Falconer & Cautley, 1837), rejection of the name *Aldabrachelys* is another nomenclatural matter. Bour (1982) was right that if *Testudo gigantea* Schweigger, 1812 was the type species of *Aldabrachelys* Loveridge & Williams, 1957 and if *Testudo gigantea* Schweigger, 1812 was *Cylindraspis indica* (Schneider, 1793), then *Aldabrachelys*, independently of its different taxonomic concept, becomes a subjective junior synonym of *Cylindraspis* Fitzinger, 1835. Likewise, Bour (2006) was right that if the holotype of *Testudo gigantea* Schweigger, 1812 was *Chelonoidis denticulata* (Linnaeus, 1766), *Aldabrachelys* becomes a subjective junior synonym of *Chelonoidis* Fitzinger, 1835. No matter how bizarre it sounds, fortunately that is true. Bour's claims were based on the principle of typification that means that every nominal taxon is inseparably linked with its name-bearing type whatever it is. However, to retain the intention of the authors of the name *Aldabrachelys* and its taxonomic delineation, and to support nomenclatural stability, the use of Article 70(a) of the Code (1964) would have been preferable to generation of the new genus name *Dipsochelys* Bour, 1982. It must be noted as well that designation of a neotype and the fixation of the name *Testudo gigantea* Schweigger, 1812 for the Aldabra tortoise as mentioned above would have resolved this matter without need to refer the case to the Commission.

Possible future threats for the stability of nomenclature

The elimination of Frazier's neotype designation for the nominal species *Testudo gigantea* Schweigger, 1812 and its replacement name *Testudo macropus* Schweigger, 1820 might stimulate a series of activities challenging other long established names in their current usage. In addition, this would further threaten the stability of the name of the Aldabra tortoise. As is evident, some professionals do not recognise the claims recently published by Bour (2006) that the holotype of Schweigger's *Testudo gigantea* still exists and that it is a specimen of the South American yellow-footed tortoise *Chelonoidis denticulata* (Linnaeus, 1766). Even if Bour is right, Article 75.6 of the Code (1999) provides a rule enabling the conservation of prevailing usage by a neotype.

With no obligation to refer the case to the Commission, there is also a real possibility to follow up Loveridge and Williams' (1957) intention and to retain the taxonomic concept of their *Aldabrachelys* which was determined by definition ('External naris higher than wide . . .'), range ('Aldabra and Madagascar') and contents ('*gigantea*, *sumeiri* [sic] and †*grandidieri*') and it is clearly in contradiction with the taxonomic concepts of both *Cylindraspis* Fitzinger, 1835 and *Chelonoidis* Fitzinger, 1835 (Loveridge & Williams, 1957). Application of Article 70.3.2 of the Code (1999) enables the fixation of a new type species and the subsequently decisive settling of the name *Aldabrachelys* Loveridge & Williams, 1957 for the Aldabra tortoise and its related species. Moreover, it gives back to Article 13.1.1 of the Code (1999) its true meaning and seriousness ('every new name published after 1930 must be accompanied by a description or definition that states in words characters that are purported to differentiate the taxon'). Without fixation of the species name *gigantea* for the Aldabra tortoise, *Aldabrachelys dussumieri* would become the valid combination for the Aldabra tortoise, a combination, that is practically unknown and the least common in the literature about the Aldabra tortoise. Frazier's proposal to accept the designation of a neotype for *Testudo gigantea* Schweigger, 1812 will solve this matter well.

If Frazier's proposal is accepted, however, we see no reason to suppress the species name *dussumieri* Gray, 1831 as Frazier asks (BZN 66: 43). Suppression of the subjective junior synonym is unnecessary because according to the Principle of Priority of the Code (1999) it cannot jeopardise the nomenclatural stability of a well-established valid name that is its subjective senior synonym and that will be fixed by the Commission. Concern that without its suppression, use of the species name *dussumieri* (and *elephantina* as well) for the Aldabra tortoise will continue, is useless, because there is a certainty that it will be, irrespective of the Opinion of the Commission. Moreover, taxonomy and phylogeny of the giant tortoises of the western Indian Ocean is still undergoing research and argument and there are several opinions about the number and classification of the valid taxa and their relationships. The name *Testudo dussumieri* Gray, 1831 has its name-bearing type definitely fixed by lectotype designation (Bour, 2006) and though the provenance and identity of the lectotype show its affiliation with the Aldabra tortoise nowadays (Austin et al., 2003; Bour, 2006), development of new scientific methods in taxonomy and their application, together with the study of old and overlooked documents, might change its present taxonomic concept. Also for this reason, demand for suppression of the name

Testudo dussumieri Gray, 1831 seems to be premature and inconvenient and its status as a subjective junior synonym of *Testudo gigantea* Schweigger, 1812 should be retained.

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(3) Washington Tapia

Director, Department of Conservation, Sustainable Development and Research,
Galápagos National Park Service, Galápagos Is., Republic of Ecuador (e-mail:
wtapia@spng.org.ec)

As part of the management authority for the wildlife and protected areas of the Galápagos Archipelago, Republic of Ecuador, we would like to clarify some misconceptions recently published in the Bulletin regarding the giant tortoises that are endemic to our islands. Although we understand that the Commission makes its decisions on a case-by-case basis, comments of several people who oppose the conservation of the name *gigantea* for the Aldabra tortoise have included allegations about the situation regarding Galápagos tortoises that need to be corrected. It may seem perfectly clear for some taxonomists to follow repeated changes to the scientific name of a single, charismatic species (Hoogmoed, *BZN* **66**: 355), but the reality in the field is quite different. Every time a scientific name changes it involves the management authority and other collaborating organisations in a process of