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NOMENCLATURE OF THE GENERA *BARBODES*, *CYCLOCHEILICHTHYS*, *RASBORA* AND *CHONERHINOS* (TELEOSTEI: CYPRINIDAE AND TETRAODONTIDAE), WITH COMMENTS ON THE DEFINITION OF THE FIRST REVISER

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ABSTRACT. - Problems resulting from a difference of definition of the first reviser between the English and French versions of 1985 edition of the International Code of Zoological Nomenclature are discussed. *Barbodes belinka* Bleeker, 1860 cannot be the type species of *Barbodes* Bleeker, 1859; *Barbus maculatus* Valenciennes, 1842 is designated as type species. The species previously placed in *Barbodes* are now to be called *Barbonymus*, new genus. *Barbus apogon* Valenciennes, 1842 is the simultaneous type species of *Cyclocheilichthys* Bleeker, 1859 and *Anematichthys* Bleeker, 1859. *Cyclocheilos* Bleeker, 1859 is a senior subjective synonym of *Cyclocheilichthys*; its type species is *Barbus macracanthus* Bleeker, 1853. *Leuciscus cephalotaenia* Bleeker, 1853 is the type species of *Rasbora* Bleeker, 1859. The type species of *Chonerhinos* Bleeker, 1854 is *Tetraodon naritus* Richardson, 1848; *Chonerhinos* is a senior subjective synonym of *Xenoptere* Bibron, 1855 (*Xenopterus* auct.). The species previously placed in *Chonerhinos* are now called *Auriglobus*, new genus.

KEY WORDS. - Fish, nomenclature, Cyprinidae, Rasbora, Puntius, Tetraodontidae.

INTRODUCTION

While compiling a list of Oriental fishes and their synonyms, I came accross a number of nomenclatural problems. The resolution of most of these problems has little or no impact on the names used for these fishes, others have. I discuss here four such cases. As the concept of first reviser plays an important role in the resolution of these cases, it is unfortunately also necessary to discuss the definition of the first reviser since the International Code of Zoological Nomenclature (1985 edition; hereunder the Code) includes two partly contradictory definitions.

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A strict application of the Code in some of the cases discussed below results in the modification of the name of several species. If one wishes to conserve these names, this will only be possible by asking the International Commission on Zoological Nomenclature, a tedious exercise which will certainly generate confusion for several years until the ruling is issued, and, even then, the outcome of the process is unpredictable. I believe that applications to the Commission should be restricted to cases where they are absolutely needed, those involving very complex situations, very well known and important animal species (e.g., domestic animals, heavily harvested species, major pest taxa, species protected by international legal instruments), etc., but definitely not for trivial cases which can automatically be resolved by application of the Code, or which concern poorly known species or those of little importance for humans.

In addition, it should be realised that the four cases to be discussed below are by far not isolated. The number of problems of this type I have discovered at both the genus and species levels for Southeast Asian fishes probably exceed one hundred. Some may be solved automatically with the introduction of the new Code, but some additional problems will also be created by the same new Code. If the four cases discussed hereunder were considered important enough to justify presenting an application to the Commission to conserve the names in their present use, logics and consistency would command that I also do it for these additional hundred cases already known to me, and I would probably have no other activity for a few years than to write applications to the Commission, and the Commission would have no other activity but to rule on trivial cases, which can be easily and automatically solved by the simple application of the Code.

Most genera of Asian fishes are still in need of critical revisions and very few have been the subject of phylogenetic analysis. When these are conducted, they will probably have a profound impact on our knowledge of these animals and will unavoidably result in numerous nomenclatural changes; these will exceed by far the number of names which have to be changed for strictly nomenclatural reasons. Name changes (although admittedly sometimes a burden) are unavoidable as they reflect a change in our knowledge; they reflect a better nomenclatural, systematic and/or phylogenetic knowledge. Unfortunately, they also reflect changes in the Code itself ! To petition the Commission to conserve an isolated name in invoking preservation of the stability of the nomenclature would be blindfolded ignorance of the flood of name changes still ahead of us. To clear as many as possible of these changes as quickly as possible is the only way of helping this flood pass as smoothly as possible and to quickly reach a more stable system.

ON THE DEFINITION OF THE FIRST REVISER

As noted by Kottelat (1998), the wordings of the definition of the first reviser (article 24(b), Glossary) in the English and French texts of the 1985 edition of the International Code of Zoological Nomenclature, unfortunately, are not equivalent. According to article 85, both texts are equivalent in force, meaning and authority, and if a difference in meaning between the two texts is discovered, the problem is to be referred to the International Commission on Zoological Nomenclature. As explicitly required by article 85, I wrote to the Secretariat of the Commission on the 26 April 1988 to highlight this problem and submitted a proposal on how to solve it. Despite several letters, that Secretariat has not submitted the case to the Commission (a disfunction which is not unique; see also Dubois, 1987; Dubois & Ohler, 1996: 317). The replies I received from the Secretariat were: 1) "subsequent citation" is

redundant because all citations must be subsequent (this is not defined by the code and I do not agree to this point; as discussed below, a citation may be written subsequently to the original act and published simultaneously), and 2) the point will be considered for the 4th edition of the code (letter of 26 January 1989). So, for eleven years now, we know that we are in the most unfortunate situation of having the choice between two definitions of the first reviser (one of the fundamental Principles of the Code, see heading of article 24) and the Commission has not moved to solve the problem. This is a violation of the Code article 77(b)(i). In this connection one may question the legal right of the Secretariat to handle and decide on such issues. The Secretariat is not mentioned in the Code itself, only in Appendix F (appendices are not part of the legislative text of the Code, article 87(b)) and clearly the Code has no provision allowing that Secretariat to suspend application of articles of the Code (e.g. articles 77 or 85) or allowing the Commission to grant such power to a third party. If a Code is to be credible, the bodies in charge of handling these issues should be the first to follow this Code. The first condition for having a stable nomenclature is by respecting the Code (and possibly by avoiding changing it every few years).

The English text requires that the first reviser action be subsequent to the original act, while the French text does not require it to be subsequent. I understand that the English text was written first, then translated into French; the English text was then emended but for some reasons these emendations have not been incorporated into the French text (L. B. Holthuis, pers. comm., 1988). Although the difference may seem subtle, it has a real impact on nomenclature. Let us imagine a publication in which the author creates two new names and in which the editor makes an infrapaginal comments that these names refer to the same taxon and in which the editor retains one as the name to be used. Such a situation is far from rare in the literature of the last century, especially in the case of posthumously published works. In this example, the action of the editor is not a first reviser's action under the English text because although posterior to the author's work, it is published simultaneously; but it is a first reviser's action under the French text. Similar cases also happen with works for which plates (on which new names appear) were printed before the text but were distributed with a text written later and in which the author changed the names of the illustrated animals. This situation applies to probably over a hundred fish names.

Spix & Agassiz's work on Brazilian fishes (1829-31) can be taken as an example. The plates had been prepared under Spix's supervision and were already printed at his death. Agassiz has then been asked to write a text to accompany the plates. In many instances he replaced the names used by Spix on the plates by new names (Kottelat, 1988). In the case of *Engraulis sericus* Spix (pl. 23 fig. 2) and *E. bahiensis* Spix (pl. 24 fig. 2), Agassiz (1829: 49) treated them as synonyms and proposed a third name for them, *Glossodus forskalii*. Under the English text, the different sets of names are simultaneous synonyms and one would have to trace the next uses of these names and try to find a first reviser action (fortunately, in the present case, the first reviser is Agassiz in the 1831 published index of the same work); under the French text, Agassiz (1829) could be treated as first reviser for both his and Spix's names.

Such problems are not uncommon with the Code. Dubois (1995: 63) pointed to ambiguities and potential disagreements in the meaning of secondary homonyms in different articles of the English text of the Code. In this case too, differences are subtle but are clearly a source of potential instability because, under some circumstances, they may lead to the use of different names. The new Code hopefully will clarify this situation; it may happen, however, that first reviser actions valid under one of the versions of the 1985 Code will become invalid and it remains to be seen whether a mechanism has been devised to minimise nomenclatural

changes resulting from such situations. The possibility exists that on particular cases, the two versions of article 24 have been used by different authors, leading to conflicting conclusions and a ruling by the Commission or provisions in the new Code on how to handle such cases is needed.

[Since the above was written, the 4th Edition of the Code has been published. The difference in the definition of the first reviser (new art. 24.2) has disappeared, but its definition has not become clearer. The word 'subsequent' has disappeared from the Code proper, so we are again left with the possibility of having a first reviser action simultaneous with the original act. But, to make things more complex, the English Glossary (p. 115) still uses the word 'subsequently' and the French Glossary (p. 248) does not. New Art. 89 reads:
Article 89. Interpretation of the Code.
89.1. Meaning of words and expressions. In interpreting the Code, the meaning attributed in the Glossary to a word or expression is to be taken as its meaning for the purposes of the Code.
89.1.1. Any question or doubt or difficulty in deciding the meaning of a word or expression used in the Code and the Glossary is to be presented to the Commission, whose ruling shall be final.

So it seems that we still have two definitions for the first reviser and no progress has been made since April 1988. *Bis repetita placent.*]

Barbodes Bleeker, 1859

The author of the genus *Barbodes* is usually given as Bleeker (1860c: 275, 313) and its type species as *Barbodes belinka* Bleeker, 1860 (e.g., Wu et al., 1977: 236; Eschmeyer, 1990: 50, 1998: 1856). This name in fact appears earlier. In a checklist of fishes of Banka, Bleeker (1859b: 361, 371) listed *Systomus (Barbodes) maculatus*, *S. (B.). fasciatus* and *S. (B.) lateristriga*, making the name *Barbodes* available by indication (article 12(b)(5)). The type species thus has to be selected among these three species. *Barbodes belinka* Bleeker, 1860c (p. 321) cannot be accepted a valid type species as it was not originally included in *Barbodes* (in addition, this name was not available at the time *Barbodes* became available).

The name *Barbodes* was used a second time by Bleeker in 1860a (p. 431) in a key, leading to "*Systomus* McCl. (Subg. *Barbodes*, *Capoëta et Systomus*)". In any case, the 1859b paper appeared before the 1860a ones as they are in successive volumes of the same journal. Even if Bleeker's 1860a article had appeared before 1859b, *Barbodes* would be a nomen nudum in the 1860a paper. All other uses of the name dates to 1860 or later and clearly the 1859b usage is the earliest.

Barbodes is a name which has been used in the literature for a variety of cyprinid fishes. It has long been ignored for southeast Asian species until revived for a genus of moderately large barbs by Rainboth (1981) (see also Rainboth, 1996; Kottelat, 1989; Kottelat et al., 1993). It has also been used in China (Wu et al., 1977; Chu & Chen 1989) for a composite assemblage of species more or less equivalent to *Puntius* sensu lato of earlier authors (e.g., Weber & de Beaufort, 1916; Smith, 1945).

The three species originally included in *Barbodes* are now placed in the genus *Puntius* Hamilton, 1822. *Systomus maculatus* (Valenciennes, 1842) is considered as a simultaneous

junior synonym of *P. binotatus* (Valenciennes, 1842) (see, e.g., Weber & de Beaufort, 1916: 186), *S. fasciatus* (Bleeker, 1853) is a secondary junior homonym of *Cirrhinus fasciatus* Jerdon, 1849 when placed in *Puntius* by Silas (1956) and it is now known as *P. johorensis* (Duncker, 1904) (see Kottelat, 1996), and *S. lateristriga* is known as *P. lateristriga* (Valenciennes, 1842). *Puntius* is a catch-all 'genus' in which a large number of unrelated small barbs have been placed. Rainboth (1996: 102, 103) recently used the name *Puntius* for only a subset of this assemblage and placed some other species in *Systomus* McClelland, 1839. Unfortunately, this concerns only eight species from Cambodia and no information is given on the position of the numerous other species currently placed in *Puntius*. The division of '*Puntius*' into several genera certainly makes sense, but it is unfortunate that it is restricted to a very limited geographic area and without information on the limits of the genera.

Using the characters listed by Rainboth (1996: 103), the three species originally included in *Barbodes* could all be placed in *Systomus*. No previous author has ever selected one of these three species as the type of *Barbodes* (at least I could not find any such selection) and I hereby designate *Barbus maculatus* Valenciennes, in Cuvier & Valenciennes, 1842 (p. 195) as type species of *Barbodes*. *Barbodes* is thus a junior subjective synonym of *Systomus* sensu Rainboth (1996), but this is probably not the final word on genus-level relationships in these fishes.

The species placed in *Barbodes* by Rainboth (1981, 1996), Kottelat (1989) and Kottelat et al. (1993) being without generic name, I propose to name it *Barbonymus*, new genus (etymology: a contraction of *Barbus*, a generic name earlier applied to these fishes, and anonymus, Latin (from the Greek anonumos), meaning anonym, without name; gender masculine). A diagnosis is given in Rainboth (1996: 94). The type species is *Barbus schwanenfeldii* Bleeker, 1853 (p. 517). [Note that the original spelling is *schwanenfeldii* and that Bleeker later emended it as *schwanefeldii*; it seems that it is based on the name of the collector, H. W. Schwanefeld (Bleeker, 1854a: 51; 1864: 94), apparently mispelt in the original description, but I could not find evidence that this is a mispelling. A strict application of article 31(c)(ii) makes *schwanefeldii* an unjustified emendation. Even if it can be demonstrated that Schwanefeld is the correct spelling of the collector's name, articles 31(a)(iii) cannot be invoked to emend the name into *schwanefeldii* as this article refers to the emendation of names improperly formed and not to the emendation of mispelt names].

Barbus binotatus Valenciennes, in Cuvier & Valenciennes, 1842 (p. 168) and *B. maculatus* Valenciennes, in Cuvier & Valenciennes, 1842 (p. 195) are simultaneous synonyms (and possibly objective synonyms, one being based on specimens and the other on a drawing sent by van Hasselt from Java; this is the subject of ongoing research). They were first treated as simultaneous synonyms by Bleeker (1855: 408) who retained *B. binotatus* as having priority. In later works, Bleeker (1860a-c) changed his mind and used the name *B. maculatus*; nevertheless, the 1855 first reviser action remains the valid one.

Cyclocheilichthys Bleeker, 1859 and *Cyclocheilos* Bleeker, 1859

The author of *Cyclocheilichthys* is usually given as Bleeker (1860a: 431) and its type species as *Barbus enoplus* Bleeker, 1850 (p. 16) by subsequent designation by Bleeker (1863a: 27; 1863b: 199) (e.g., Eschmeyer, 1990: 113). Similarly, the first use of the name *Anematichthys* is usually given as Bleeker (1860b: 149) and its type species as *Barbus apogon* Valenciennes, 1842 by subsequent designation by Bleeker (1863a: 27; 1863b: 199).

In fact both names were first used by Bleeker (1859b: 371) in a list of the fishes of Banka as "*Cyclocheilichthys (Anematichthys) apogon* Blk = *Systomus apogon* Val. [Valenciennes, in Cuvier & Valenciennes, 1842: 392]". This use clearly is an indication (article 12(b)(5)) and makes both *Cyclocheilichthys* and *Anematichthys* available. As Bleeker lists only a single species for both *Cyclocheilichthys* and *Anematichthys*, it is the type species of both new names by monotypy. As both names have the same type species, they are objective synonyms.

As *Cyclocheilichthys* and *Anematichthys* are published simultaeously, their relative precedence is determined by the first reviser (article 24(a)). Formally, the application of the English or the French texts of the Code mentioned above results in different analyses of the first reviser's action. Fortunately, in the present case, the result is the same under the two texts.

Under the definition of the English text, the first subsequent reviser can be considered to be Bleeker (1860b: 149) where he used *Anematichthys* thrice as a subgenus of *Cyclocheilichthys*, thus giving priority to *Cyclocheilichthys*. Under the definition of the French text, Bleeker himself, in the original indication (1859b: 371), could be interpreted as first reviser having established the priority of *Cyclocheilichthys* over *Anematichthys*. To be fair to Bleeker, one should note that it was not his intention to name a new genus with a single included species and to simultanously create a distinct subgeneric name for the same species. He had in press or in preparation (1860a, 1860c) a revision of all cyprinid genera in which he proposed a new genus *Cyclocheilichthys* with three subgenera *Cyclocheilichthys*, *Anematichthys* and *Siaja*; he simply listed one of the included species and used two of these names before the formal description was published and, with the application of today's nomenclatural rules, it results in the present situation.

[Under the new Code (which is not yet in force), *Cyclocheilichthys* being a genus name has automatic precedence over *Anematichthys*, a subgenus name (article 24.1). This provision does not exist with the 1985 Code and it could have been possible that a first reviser had retained *Anematichthys* as the valid name and this name would have to be changed on January 1, 2000. Here again, it is unfortunate that the Code does not include provisions avoiding such unnecessary shifts].

In this connection one should note a generic name which has been overlooked by most nomenclators. Bleeker (1859a: 386) created the name *Cyclocheilos* with the type species *Barbus macracanthus* Bleeker, 1853 (p. 516), by monotypy. Later, Bleeker seems to have changed this name into *Cyclocheilichthys*, but he never explained why. He might have considered that *Cyclocheilos* was a preoccupied name. In fact, two similar names exist, *Cyclochila* Amyot & Serville, 1843: 470 (type species: *Tettigonia australasiae* "Donovan Inst. of New Holl. Hemipt. pl. 2 fig. 1", by monotypy) and *Cyclochilus* Agassiz, 1845: 26 (nomen nudum). At Bleeker's time, the similarity in spelling and etymology was enough to consider such names as homonyms, but under the present Code, as they differ by at least one letter, they cannot be treated as homonyms (article 56(b)). *Cyclocheilos* Bleeker, 1859a, is thus an available name and is the earliest available name (thus the valid one) for the fishes presently called *Cyclocheilichthys* Bleeker, 1859b. As Bleeker's 1859a and 1859b papers appeared in volumes 16 and 18, respectively, of the same journal, their order of publication seems obvious.

[With the new Code, the situation is as follow: until December 31, 1999, the valid name of the genus is *Cyclocheilus*; after January 1, 2000, in accordance with article 23.9.2 of the new

Code, I declare *Cyclocheilichthys* as valid (*nomen protectum*). "Conditions of article 23.9.1.2 are met [see synonymy in Sontirat, 1976], and [...] to [my] knowledge, the conditions in article 23.9.1.1 applies".

Rasbora Bleeker, 1859

The author of *Rasbora* is usually given as Bleeker (1860a: 435, 1860b: 154 or 1860c: 285, 435) with the type species as *Cyprinus rasbora* Hamilton, 1822, by absolute tautonymy. In fact the first use of the name is by Bleeker (1859b: 361, 371) again in the list of the fishes of Banka. Four nominal species were included: *Leuciscus bankanensis* Bleeker, 1853, *L. cephalotaenia* Bleeker, 1852, *L. einthovenii* Bleeker, 1851, and *L. kalochroma* Bleeker, 1851. As it was not originally included, *Cyprinus rasbora* cannot be the type species. The type species is *Leuciscus cephalotaenia* Bleeker, 1852 (p. 97), by subsequent designation by Bleeker (1863a: 28; 1863b: 202).

Bleeker's 1859b publication clearly appeared before the 1860a one (sometime assumed to have appeared in 1859; see Kottelat, in press a) as they are in successive volumes of the same journal. The 1860b article appeared in another journal. Exact publication dates are missing, but the 1859b article was written in February 1859 (p. 378) and the 1860b one in September 1859 (p. 270), so that it seems that 1859b appeared first. The 1859b paper has been published before 14 February 1860 and the 1860b paper after (Kottelat, in press a).

The genus *Rasbora* as commonly understood is a polyphyletic lineage. Howes (1983: 183, 194) recognised some species of *Rasbora* sensu lato as a lineage distinct from most other species and proposed the name *Parluciosoma* (type species: *Leuciscus argyrotaenia* Bleeker, 1850). He included *R. cephalotaenia* in *Parluciosoma*. Until now Howes' system has not been followed, not because it has been proved wrong, but mainly because of tradition and the fact that the generic position of the bulk of the species placed in *Rasbora* is still uncertain. If Howes' system is followed, and if *R. cephalotaenia* is confirmed to be congeneric with *R. argyrotaenia*, then the name *Parluciosoma* would be a synonym of *Rasbora* and the species retained in *Rasbora* by Howes would need a new generic name. It would be premature to propose a new name here as *Rasbora* (sensu Howes) seems an artificial genus which will most likely have to be divided into several genera.

Chonerhinos Bleeker, 1854

Bleeker (1854b: 259) created the genus name *Chonerhinos* with two included species, *Tetraodon naritus* Richardson, 1848 and *Tetraodon modestus* Bleeker, 1851. Fraser-Brunner (1943), Roberts (1982) and subsequent authors regard these two species as belonging to distinct genera, *Xenoptere naritus* and *Chonerhinos modestus* and listed *T. modestus* as the type species of *Chonerhinos*. But, as noted by Jordan (1919: 256, 263) and Eschmeyer (1990: 93), the type species of *Chonerhinos* is *T. naritus* by subsequent designation by Bleeker (1865: 49). This means that if *T. naritus* and *T. modestus* are distinct genera, the name *Chonerhinos* cannot be used for *T. modestus*.

The type species of *Xenoptere* Bibron, in Duméril, 1855 (usually erroneously listed as *Xenopterus* Troschel, 1856; see Kottelat, in press b) is *X. bellangeri* Bibron, in Duméril, 1855 (a junior synonym of *T. naritus*). This makes *Chonerhinos* a senior subjective synonym

of *Xenoptere* and *T. naritus* should be called *Chonerhinos naritus*.

The genus called *Chonerhinos* by Fraser-Brunner (1943) and subsequent authors has no valid name and I propose to name it *Auriglobus*, new genus. A diagnosis of the genus is given in Fraser-Brunner (1943: 116) and Roberts (1982: 2) under *Chonerhinos*. The type species is *Tetraodon modestus* Bleeker, 1851 (p. 16). The name is derived from the Latin aurum (gold) and globus (globe, sphere). Gender masculine.

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