The wording and examples given in Rule 47a of the International Code of Nomenclature of Prokaryotes are misleading

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Rule 47a of the International Code of Nomenclature of Prokaryotes contains wording that is misleading. The examples given also give the wrong impression with regards the role of genus names in determining the priority of names at a higher taxonomic rank.

The current wording of Rule 47a of the International Code of Nomenclature of Prokaryotes (Parker et al., 2015) is divided up into a number of sections.

‘When two or more taxa of the same rank from subtribe to family, inclusive, are united under a taxon of higher rank, the higher-ranking taxon should derive its name from the name of the earliest legitimate genus that is a type genus of one of the lower-ranking taxa.’

This wording can be misleading because there is nothing in the Code that requires the new name of a new higher taxon that has as its nomenclatural type the genus to be based on the earliest legitimate and validly published genus name. This may be a sensible recommendation, but it should not be a rule. In instances where the taxa included in the higher taxon include the nomenclatural type of a higher taxon, then that name is to be used. In instances where the taxa included in the higher taxon include more than one nomenclatural type of a higher taxon at the same rank, then priority is determined by the date of valid publication of the name of the higher taxon, with the date of valid publication of the nomenclatural type at the rank of genus playing no role.

‘If, however, the use of this generic name would lead to confusion in bacteriology, then the author may choose as type a genus which, in his opinion, leads to the least confusion and, if in doubt, should refer the matter to the Judicial Commission.’

Where the genus is the nomenclatural type (i.e. from subtribe to order, inclusively), an author is free to select the nomenclatural type of a new taxon at a higher taxonomic rank irrespective of the date of valid publication of the names of genera included in that higher taxon. The only requirement is that the name of the higher taxon derives its name from the stem of the genus name selected as the nomenclatural type and the appropriate ending is added as defined in Rule 9 Table 1.

‘Note. The type of a taxon above the rank of genus is one of the contained genera (Rule 15). The name of the type subgenus is the same as that of the type genus; therefore, only the names of genera need to be considered.’

Since genera are the nomenclatural types of taxa at the rank from family to order, inclusively, one does not specifically need to exclude subgenus names. In essence the text is superfluous.

‘Example: Buchanan in the publication by Breed et al. (1957) followed the law of priority in combining the families Beggiatoaceae Migula 1894 and Vitreoscillaceae Pringsheim 1949 into the new order Beggiatoales, whose type is Beggiata Trevisan 1842, which has priority over Vitreoscilla Pringsheim 1949. In contrast, Breed et al. (1957) chose Pseudomonas Migula 1894 over Spirillum Ehrenberg 1832 and Nitrobacter Winogradsky 1892 to form the name of a new suborder Pseudomonadinae Breed et al. 1957.’

The example refers to a ‘law of priority’ that does not reflect the wording of the Code. The Code certainly does not refer to laws, but General Considerations, Principles, Rules and Recommendations. Should one consider that reference is being made to the rules governing priority, then the wording also makes incorrect assumptions. While Beggiatoa Trevisan 1842 was validly published before Vitreoscilla Pringsheim 1949 and Spirillum Ehrenberg 1832 was validly published before Nitrobacter Winogradsky 1892 and Pseudomonas Migula 1894, priority only plays a role at the rank of genus if two or more genera are considered to be heterotypic synonyms. The selection of the nomenclatural type of a new family name does not depend on the date of valid publication of genus names included in the family. Should a family name have already been validly published based on a nomenclatural type (at the rank of genus) then that family name is to be used. If two or more family names are considered to be heterotypic synonyms because their nomenclatural types are considered to be members of a single family, then priority is based on the date of valid
publication of the family name, not of their nomenclatural types. The example is incorrectly worded.

In essence, there is no support for the wording and examples given in the text of the Code. The function of Rule 47a is at best a recommendation that would be more appropriately re-worded as follows:

Recommendation:

'When two or more taxa of the same rank from subtribe to family, inclusive, are united under a new taxon of higher rank for which there is no previous validly published name, consideration should be given to selecting the earliest legitimate genus name that is the nomenclatural type of one of the lower-ranking taxa to be the nomenclatural type of the higher-ranking taxon that also derives its name from the name of that genus.'

Example: Buchanan in the publication by Breed et al. (1957) combined the families Beggiatoaceae Migula 1894 and Vitreoscillaceae Pringsheim 1949 into the new order Beggiatoales, whose type is Beggiatoa Trevisan 1842, which was validly published before Vitreoscilla Pringsheim 1949 and was included in the family. In contrast, Breed et al. (1957) chose Pseudomonas Migula 1894 over Spirillum Ehrenberg 1832 and Nitrobacter Winogradsky 1892 to form the name of a new suborder, Pseudomonadinae Breed et al. 1957.'

This would relegate Rule 47a to a recommendation and leave Rule 47a vacant. No harm would be done if the Rule (without relegating it to a recommendation) were to be deleted in its entirety, including the examples.

Acknowledgements

The author is employed by an organisation that offers commercially-both taxonomic services as well as biological material to the scientific community. This may be perceived as a potential conflict of interest.

Reference