The unsatisfactory wording of Rule 15 of the 1975 and 1990 revisions of the International Code of Nomenclature of Bacteria (Lapage et al., 1975, 1992) has been highlighted by Tindall (2008). The original wording is:

‘The nomenclatural type, referred to in this Code as “type”, is that element of the taxon with which the name is permanently associated.’

Based on arguments presented by Tindall (2008) this led to the Judicial Commission changing the wording at the 2008 plenary (Garrity et al., 2011) to:

‘The nomenclatural type, referred to in this Code as type’, is that element of the taxon with which the name is permanently associated whether as correct name or a later heterotypic synonym.’

However, Tindall (2008) had originally proposed a slightly different wording:

‘The nomenclatural type, referred to in this Code as “type”, is that element of the taxon with which the name is permanently associated, whether as a correct name or as a synonym.’

This wording does not limit synonyms to only heterotypic synonyms, but would also include homotypic synonyms. The proposed changes to the wording largely had their origin in a number of problems outlined by Tindall (2008) that primarily related to heterotypic synonyms. The issue of homotypic synonyms was not explicitly expressed and it would be appropriate to highlight this aspect here.

In the case of the nomenclatural type (i.e. the type strain) of Flavobacterium heparinum Payza and Korn 1956, this also serves as the homotypic type of Cytophaga heparina (Payza and Korn 1956) Christensen 1980, Sphingobacterium heparinum (Payza and Korn 1956) Takeuchi and Yokota 1993 and Pedobacter heparinus (Payza and Korn 1956) Steyn et al. 1998. As in all such cases, the combination used as the correct name is based on the principle of ‘with a given circumscription, position and rank’. Consequently, if the type strain is considered to be a member of the genus Flavobacterium then in the absence of any other names competing for priority in that genus the correct name to be used is Flavobacterium heparinum Payza and Korn 1956 with the other homotypic synonyms remaining legitimate and validly published. However, if the type strain is considered to be a member of the genus Sphingobacterium then in the absence of any other names competing for priority in that genus the correct name to be used is Sphingobacterium heparinum (Payza and Korn 1956) Takeuchi and Yokota 1993 with the other homotypic synonyms remaining legitimate and validly published. If the type strain is considered to be a member of the genus Pedobacter then in the absence of any other names competing for priority in that genus the correct name to be used is Pedobacter heparinus (Payza and Korn 1956) Steyn et al. 1998 with the other homotypic synonyms remaining legitimate and validly published. Pedobacter heparinus (Payza and Korn 1956) Steyn et al. 1998 is also the nomenclatural type of the genus Pedobacter Steyn et al. 1998 and as long as the type strain and the type species are considered to be members of the genus Pedobacter that genus name may be used as a correct name. However, should any of the other nomenclatural alternatives listed above be implemented then the genus Pedobacter Steyn et al. 1998 would no longer be a correct name, although it remains both legitimate and validly published and the fate of any other species included in the genus Pedobacter would have to be reconsidered as required by Rule 37a.

In the case of the nomenclatural type (i.e. the type strain) of Oerskovia turbata (Erikson 1954) Prauser et al. 1970, it also serves as the homotypic type of Cellulomonas turbata (Erikson 1954) Stackebrandt et al. 1983. Oerskovia turbata (Erikson 1954) Prauser et al. 1970 is also the type of the genus Oerskovia Prauser et al. 1970. When the type strain...
is considered to be a member of the genus Oerskovia then the correct name to be used is Oerskovia turbata (Erikson 1954) Prauser et al. 1970. When Stackebrandt et al. (1982, 1983) proposed that the genera Oerskovia Prauser et al. 1970 and Cellulomonas Bergey et al. 1923 be united, based on the principle of priority when applied to the genus names, they created the new combination Cellulomonas turbata (Erikson 1954) Stackebrandt et al. 1983 based on the same type as Oerskovia turbata, using Cellulomonas turbata as the correct name. However, that type also remains the type of Oerskovia turbata (Erikson 1954) Prauser et al. 1970 even if not used as the correct name, but as a synonym. Similarly, even if the correct name, based on the principle of ‘with a given circumcision, position and rank’, is Cellulomonas turbata (Erikson 1954) Stackebrandt et al. 1983, the homotypic synonym Oerskovia turbata (Erikson 1954) Prauser et al. 1970 also remains the type of the genus Oerskovia Prauser et al. 1970. As a consequence, when Stackebrandt et al. (2002) considered that the type of Cellulomonas turbata (Erikson 1954) Stackebrandt et al. 1983 was not a member of the genus Cellulomonas, but a member of a genus distinct from all others, there were two consequences. First, the name Oerskovia turbata (Erikson 1954) Prauser et al. 1970 becomes a correct name again and, secondly, because this is the nomenclatural type of the genus Oerskovia Prauser et al. 1970 this genus name may also be used as a correct name again.

A discussion of heterotypic synonyms in this context has been dealt with by Tindall (2008) and also implemented in Opinion 94 (Tindall, 2014).

Once the principle is understood of selecting only one correct name ‘with a given circumcision, position and rank’ from a single option or a series of heterotypic or homotypic synonyms, all of which remain legitimate and validly published, then the purpose of the proposed wording of Rule 15 should be clearer.

An analysis of earlier versions of the Code also provides insights into the use of different wording. In the 1948 revision of the Code (Buchanan et al., 1948, 1949) Principle 11 states:

‘A nomenclatural type is that constituent element of a group to which the name of the group is permanently attached, whether as an accepted name or as a synonym.’

The term accepted name appears to be used in a manner similar to the term correct name in the 1975 and 1990 revisions (Lapage et al., 1975, 1992).

In the 1958 revision of the Code (Editorial Board of the International Committee on Bacteriological Nomenclature, 1958) Principle 11 states:

‘A nomenclatural type is that constituent element of a taxon to which the name of the taxon is permanently attached.’

Annotation in the Code following Principle 11 indicates that Article 18 of the 1952 Botanical Code reads:

‘A nomenclatural type (typus) is the constituent element of a taxon to which the name of the taxon is permanently attached, whether as an accepted name or as a synonym.’

In the 1966 revision of the Code (Editorial Board, 1966) Principle 11 states:

‘A nomenclatural type is that constituent element of a taxon to which the name of the taxon is permanently attached, whether as the accepted name or as a synonym.’

The term accepted name is retained (although not defined) despite the fact that the 1958 and 1966 revisions of the Code had introduced the term correct name.

Furthermore Rule 9a states:

‘The nomenclatural type (nominifer) is that constituent element of the taxon to which the name of the taxon is permanently attached.’

In the proposed revision of the Code published in 1973 (Lapage et al., 1973) Principle 11 was deleted and the wording of Rule 9a became the basis of Rule 15. This might clarify why the wording of Rule 15 in the 1975 and 1990 revisions (Lapage et al., 1975, 1992) reached its current form.

The current wording of Article 7.2 of the ICN (McNeill et al., 2012), essentially an important basis for the wording and development of earlier versions of the Code, continues to use:

‘A nomenclatural type (typus) is that element to which the name of a taxon is permanently attached, whether as the correct name or as a synonym.’

By providing this historical overview it becomes clearer how the wording with respect to the definition of nomenclatural types has developed. In conclusion it is proposed that the wording of Rule 15 should not neglect the issue of homotypic synonyms and the current wording changed to:

‘The nomenclatural type, referred to in this Code as “type”; is that element of the taxon with which the name is permanently associated, whether as a correct name or as a synonym.’

Declaration of a potential conflict of interest

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

References


Tindall, B. J. & Judicial Commission of the International Committee on Systematics of Prokaryotes (2014). *Agrobacterium radiobacter* (Beijerinck and van Delden 1902) Conn 1942 has priority over *Agrobacterium tumefaciens* (Smith and Townsend 1907) Conn 1942 when the two are treated as members of the same species based on the principle of priority and Rule 23a, Note 1 as applied to the corresponding specific epithets. Opinion 94. *Int J Syst Evol Microbiol* 64, 3590–3592.