Are Rules 20d and 20e of the International Code of Nomenclature of Prokaryotes superfluous?

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The wording of Rule 20d and 20e of the 1975, 1990 and 2008 revisions of the International Code of Nomenclature of Bacteria/Prokaryotes deals with problems that may arise when the nomenclatural type of a genus was not designated or when there are problems determining what the nomenclatural type should be. However, Rule 16 states that a nomenclatural type must be designated, while Rule 27 clearly states that a requirement of valid publication is the designation of a type for a new taxon and this is reinforced under Rule 29 that deals with the valid publication of a genus or subgenus name. Furthermore, the wording of Rule 18a and Rule 30 strongly suggests that the type of problem envisaged with regards the species included in the genus should no longer occur. The wording of Rule 20d and 20e appears to have originated in earlier revision of the International Code of Nomenclature of Bacteria and may no longer be relevant in the 1975, 1990 and 2008 revisions due to significant changes made in those revisions.

Under the heading ‘type of a genus’ Rule 20d in the 1975 and 1990 revisions of the International Code of Nomenclature of Bacteria (Lapage et al., 1975, 1992) states:

‘Designation by a subsequent author

The type species shall be selected from one of the species included when the genus was originally published.’

However, Rule 16 of the 1975 and 1990 revisions state:

‘After the date of publication of this Code, the type of a taxon must be designated by the author at the time the name of the taxon is published in the IJSB.’

That wording has been updated in the 2008 revision (Parker et al., 2015) to read:

‘The type of a taxon must be designated by the author at the time the name of the taxon is validly published in the IJSB/IJSEM.’

Rule 27 states:

‘A name of a new taxon, or a new combination for an existing taxon, is not validly published unless the following criteria are met:

3) The type is designated for a new taxon, or cited for a new combination, in the IJSB/IJSEM.’

Under Rule 29 covering the valid publication of a genus or subgenus name, the wording reads:

‘For a generic or subgeneric name to be validly published it must comply with the following conditions.

1) It must be published in conformity with Rules 27 and 28b.’

Rule 20d uses the wording ‘original publication’ and it is unclear what this term means. Taken in isolation of other Rules it may mean either the effective publication and/or the valid publication. However, taken in conjunction with Rule 27 (3) and 29 (1) it would appear that a name cannot be validly published unless a nomenclatural type is designated. If the genus name is not validly published then the actions of a subsequent author would not cover designating a type for a validly published genus name, because the name is not validly published. If this Rule refers to actions of subsequent authors regarding a genus name that has appeared in an effective publication where a type is not designated, the subsequent designation of a nomenclatural type would be a normal course of action laid down under Rules 27 (3) and 29 (1) should a subsequent author(s) wish to validly publish that genus name. Alternatively, inclusion of the genus name on the Validation Lists with the designation of the type would be another solution, but would also not necessarily require action of subsequent authors.

A similar situation occurs with Rule 20e where the wording of the 1975 and 1990 (Lapage et al., 1975, 1992) revisions of
the International Code of Nomenclature of Bacteria was altered at the plenary of the Judicial Commission at the Bacteriology and Applied Microbiology Congress of IUMS in 1999 (De Vos & Trüper, 2000). This now reads (Parker et al., 2015):

‘(1) If none of the species named by an author in the effective or valid publication of a generic name can be recognized, i.e., if no identifiable type species can be selected in accordance with the Rules, the Judicial Commission may issue an Opinion declaring such generic name to be a rejected name (nomen rejiciendum) and without standing in nomenclature.’

Taken in isolation this would appear to be sensible action, but in the context of Rule 27 (3) and 29 (1) it should be evident that there is the possibility that the genus name is not validly published. If there are any doubts about the type species one would also need to consult Rule 18a, Rule 27 and Rule 30, all of which should ensure that the nomenclatural type of the type species, and any other species in that genus at the time of valid publication are adequately catered for. ‘Without standing in nomenclature’ also appears to be a euphemism for not validly published. The second part of Rule 20d (2) reads:

‘However, a generic name for which no identifiable type species can be selected in accordance with the Rules might have come into use for identifiable species which were subsequently named. In this case, one of these later species may be selected as the type species and established as such by an Opinion of the Judicial Commission. The generic name is then ascribed to the author of the name of the species selected as the type species’

and provides a solution, but it also does not state whether the genus name is validly published prior to selection of the type, nor does it state that this then has the effect of validly publishing the genus name, although one can perhaps assume that this is the intent. In the 1958 and 1966 revisions of the Code, Rule 20d (2) was the second paragraph of Rule 9c (Editorial Board of the International Committee on Bacteriological Nomenclature, 1958; Editorial Board, 1966). The two paragraphs of Rule 9c were split into two sections in the proposed revisions of the Code published in 1973 (Lapage et al., 1973) and retained in that form. In both forms, as either a second paragraph or as a second part to a Rule, the wording indicates that it can only be implemented if there is a problem at the time of the effective or valid publication of the genus name as specified in the first paragraph or first part of the Rule.

Perhaps the flaw is in the wording of Rule 20b that [with published alterations, De Vos & Trüper (2000)] reads (Parker et al., 2015):

‘If the author of the effective or valid publication of a generic or subgeneric name designated a type species, that species shall be accepted as the type species.’

If the author does not designate a type species according to Rule 27 (3) and 29 (1) then the name is not validly published and is not available for further use, except having appeared in an effective publication. While elaborate mechanisms appear to have been retained for dealing with genus names, similar problems could be envisaged for species combinations, but these mechanisms are not part of the Rules, suggesting that they may not be necessary. The necessity of parts of Rule 20 may be the result of problems encountered prior to the publication of the Approved Lists (Skerman et al., 1980), the setting of a new starting date for nomenclature (1 January 1980) and the channelling of all validly published names via a single journal. The current set of rules under Rule 20 (Lapage et al., 1975, 1992; Parker et al., 2015) can be found in a similar form under Rule 9c of the 1958 and 1966 revisions of the Code (Editorial Board of the International Committee on Bacteriological Nomenclature, 1958; Editorial Board, 1966). Prior to the publication of the Approved Lists, some genus names may not have been associated with a designated type, and the valid publication of that genus name with a designated type on the Approved Lists (Skerman et al., 1980) constitutes selection of the type by ‘international agreement’. There may also be instances where the designated type associated with the genus name published prior to 1 January 1980 may have been a different species. However, the inclusion of that genus name with a different type on the Approved Lists has the effect of overriding the previous type [see Sneath (1982) and Judicial Commission (1985)]. In order to reflect that situation and the fact that a genus name is not validly published if a type species is not designated, alterations to Rule 20b would be appropriate. Removing reference to the authors would allow the actions taken on the Approved Lists (Skerman et al., 1980) and the following wording may be appropriate:

‘The nomenclatural type of a genus is the species designated as the type at the time of valid publication irrespective of whether it is later used as a correct name or as a synonym.’

In addition a section should be added to Rule 29 clarifying aspects covered in Rule 20 and 29 (3). For example Rule 29 (2) reads:

‘2. The genus or subgenus named must include one or more described or previously described species.’

and could be changed to:

‘2. The valid publication of genus or subgenus name must include one or more species combinations validly published according to Rule 30.

3. A nomenclatural type must be selected at the time of valid publication from one of the species included in the genus. In the case of a genus containing a single species that species serves as the type (see Rule 20c).’
This may also require the updating of Rule 20c from:

‘If the genus when originally published included only one species, then that species is the type species.’

to:

‘If the genus, when its name is validly published, included only one species, then that species is the type species irrespective of whether it is designated as the type.’

Appropriate cross-referencing from Rule 16 and 27 may also be necessary.

The proposed changes to the wording of the Code need to be carefully considered. However, the possibility exists that wording has been retained in the current Code that has its basis from a time when that wording was necessary. Changes to the infrastructure of the Code in the 1975 and 1990 revisions (Lapage et al., 1975, 1992) were designed to solve a number a problems, including those referred to in Rules 20d and 20e. However, if the publication of the Approved Lists (Skerman et al., 1980) and the subsequent requirement of valid publication in a single journal, together with wording that countered problems of the past have solved these issues, this may now make Rule 20d and 20e superfluous.

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References


